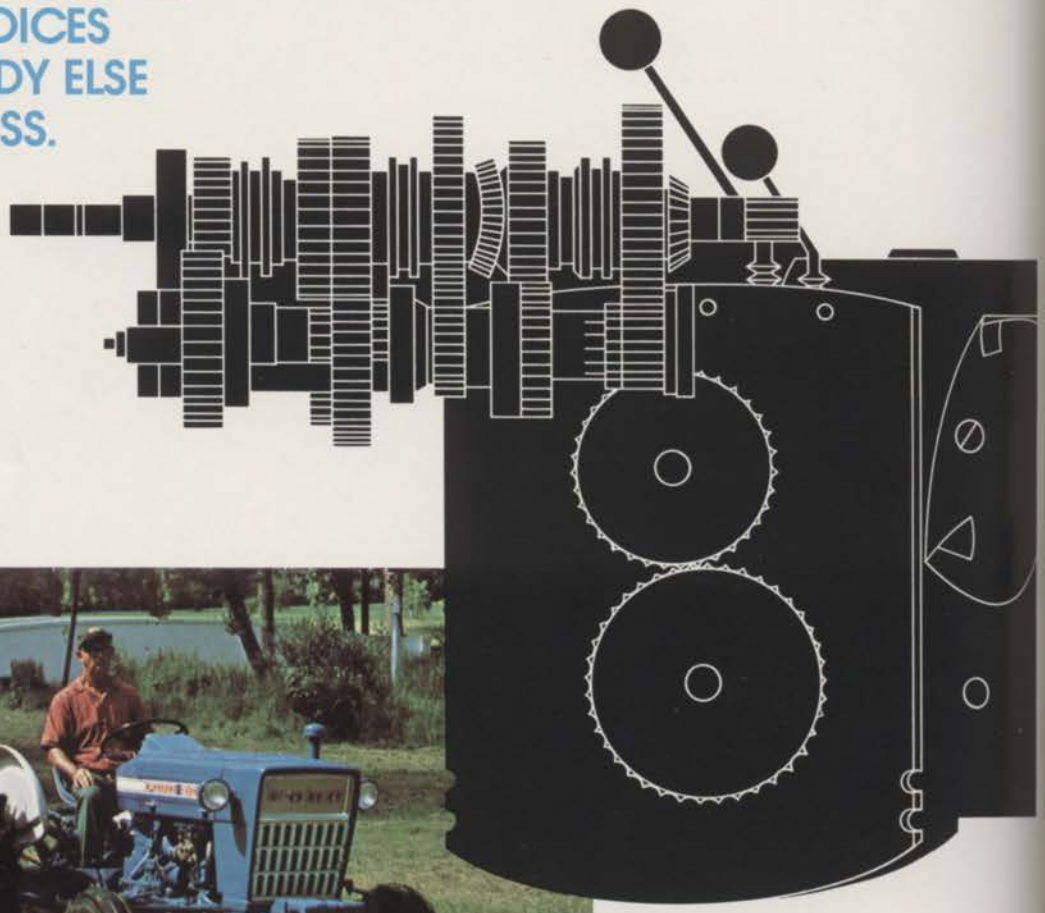
WEEDS TREES and TURF

SEPTEMBER 1972

EMPHASIS: WEED CONTROL

THE FORD DIFFERENCE

MORE TRANSMISSIONS AND PTO CHOICES THAN ANYBODY ELSE IN THE BUSINESS.



You're going to see a lot of Ford differences in '72.

One of the most important is right up above: the transmission. We offer you more of them than anybody else. And more PTO options, too.

We offer you more ways to shift for a good reason. Because you call on a Ford tractor to do all kinds of different jobs. From light duty mowing with a Ford LCG to heavy earth moving with the big Ford 5550!

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More transmissions and PTO options than anybody else in the tractor business. A Ford difference that means best choice for you. Isn't that worth talking to your nearest Ford tractor dealer about?

NUMBER ONE ON WHEELS

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Your Ford industrial tractor and equipment dealer is listed in the Yellow Pages under "Tractors" or "Construction-Equipment." See him for information on how to buy, lease, rent or finance.

Ford

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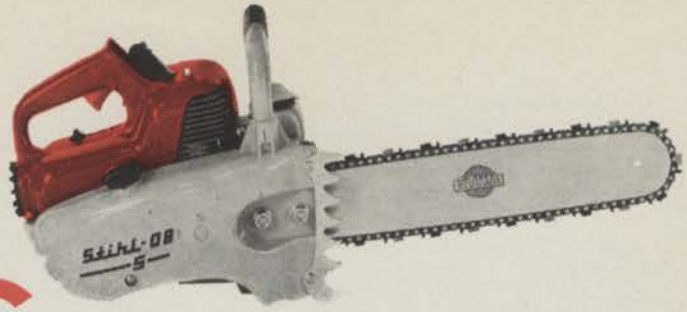
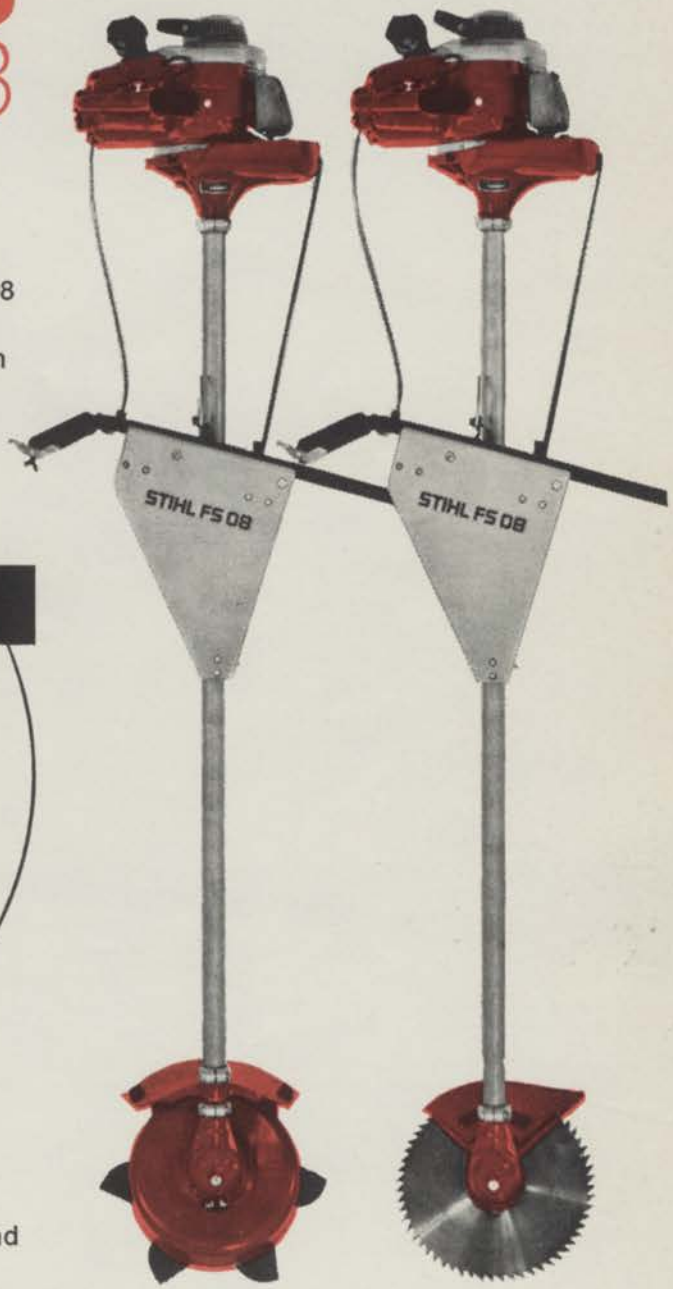


STIHL 08 S
STIHL FS 08

A perfect pair: The versatile STIHL 08S big power chain saw and the handy new, lightweight STIHL FS - 08 Brush Cutter. The same high performance engine powers them both. The FS - 08 Brush Cutter does a real professional job in tough weeds, stubborn shrubs and small trees when using either the blade with rotating knives or



circular saw. **This brush cutter features STIHL's famous AV anti-vibration system that absorbs fatiguing engine vibrations.** Lets you cut longer and easier with less effort.

Ask your rental friends or your nearest dealer about STIHL'S better performance, lower maintenance & down-time and proven earning capacity.

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acthal®

art your Total Turf Care this year ith Dacthal W-75 herbicide. Or use e convenient 5 percent granular rm if you like.

Dacthal gets the jump on most nual grasses and broadleaf weeds. is preemergence herbicide events weeds as they germinate. abgrass and *Poa annua* don't have hance. Yet, Dacthal is a truly ective herbicide that will not affect tablished grass. It's even safe for w grass when used according to el directions.

Just one application in early spring ll control weeds for a full season. the case of *Poa annua*, another plication in late summer keeps this e germinating pest out of sight.

Don't worry about residue build-up ner. Dacthal degrades in one ason; it's not persistent in the soil.

acamine®

r those areas where broadleaf eds are a problem, use Dacamine f herbicide to sustain your Total f Care. Postemergent Dacamine s dandelion, plantain, poison ivy d most other broadleaf weeds.

Dacamine is a special form of 2,4-D, non-volatile, yet very effective. It combines the weed-killing power of an ester with the safety of an amine. So Dacamine stays put—kills the weeds you spray it on but won't vaporize and damage valuable plants nearby.

Dacamine is an oil soluble concentrate. This allows it to penetrate waxy leaves and move all the way to the roots—killing the whole plant.

Daconil 2787®

Total Turf Care includes broad-spectrum disease control. Daconil 2787 is the one fungicide that solves most disease problems. Why use a group of fungicides to do what Daconil 2787 can do by itself?

Use Daconil 2787 to prevent or cure: Brown Patch, Copper Spot, Dollar Spot, Leaf Spot, Melting Out, Pink Snow Mold (in Washington and Oregon only) and more. Many leading golf courses use Daconil 2787 in their disease prevention program.

Daconil 2787 has performed well on over 25 grass species and varieties. Excellent turf tolerance allows you to use it even in hot, humid weather.

Just mix Daconil 2787 with water and spray. You don't need a surfactant. It's compatible with many commonly-used pesticides. Follow label directions for exact usage.

Daconate®

Round out your Total Turf Care with Daconate postemergence herbicide. Get those escape weeds that slipped by your preemerge. Daconate will effectively control crabgrass, chickweed, wood sorrel and other hard-to-kill weeds. It's economical, too.

Daconate is a ready-to-use arsonate liquid, pre-mixed with the right amount of surfactant for maximum coverage and control. Since it is an organic arsenic compound, it does not have the more toxic properties of inorganic arsenic compounds, such as calcium or lead arsenate. For best results, spray Daconate during warm weather when weeds are actively growing.

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et this Total Turf Care dial to help u solve many turf problems. Just a ist of the wrist helps you identify a oblem and select a treatment. Send e coupon today for your Total Turf are dial. Always remember to follow e label directions when using y chemical.

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Diamond Shamrock Chemical Company

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WEEDS TREES and TURF®

Volume 11, No. 9 September, 1972

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Weed Control Western Style 11
Pierce county, Washington, is one county where practically every known vegetation problem exists. Harrison Ford, county weed supervisor, has dealt a decisive blow to weeds and grasses. His county weed program has amassed a record of accomplishment which many other states may well envy.

Fertilizer from Animal Wastes 15
Organic chemicals and animal wastes team up to make a compost fertilizer that is in much demand by golf superintendents and others.

Why Power Saws Fail 16
If your power saw has let you down in the middle of an important sawing job, read this informative article. Author Hank Harvey combines his experience and technical knowhow to present the "How's" on avoiding trouble with your saw.

A Business With A Future 20
Chem-Trol, Inc., a Kansas City, Kan. based firm, has specialized in the complete job of weed control. Business is booming and the staff is on the run most of the time. They find that every job requires at least three different chemicals.

Slow Release Nitrogen — Golf Course Labor Saver 22
Maintaining good fertility on a golf course in an area where air and water pollution is a problem is a job in itself. Golf superintendent Dick Viergever, who manages the Sunnyvale Golf Course in California has found that slow release nitrogen improves his turf and reduces high labor costs.

Victorious War on Brush 24
Here's a report on how brush species are succumbing to a relatively new brush control chemical called Banvel. It has shown activity on nearly every known specie of brush in the U.S. Velsicol Company experts report excellent control in Alabama, Louisiana, Texas, Maine and elsewhere.

Hyacinth Control Society Report 28

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The Cover

September is a good time to see results of earlier herbicide applications. It's also a time to plan next year's weed control program. Many applicators find that fall applications of chemicals reduce the unsightly brownout. Our cover shows the results of bare ground applications, selective weed control, utility rights-of-way herbicide applications and the familiar mixing scene.

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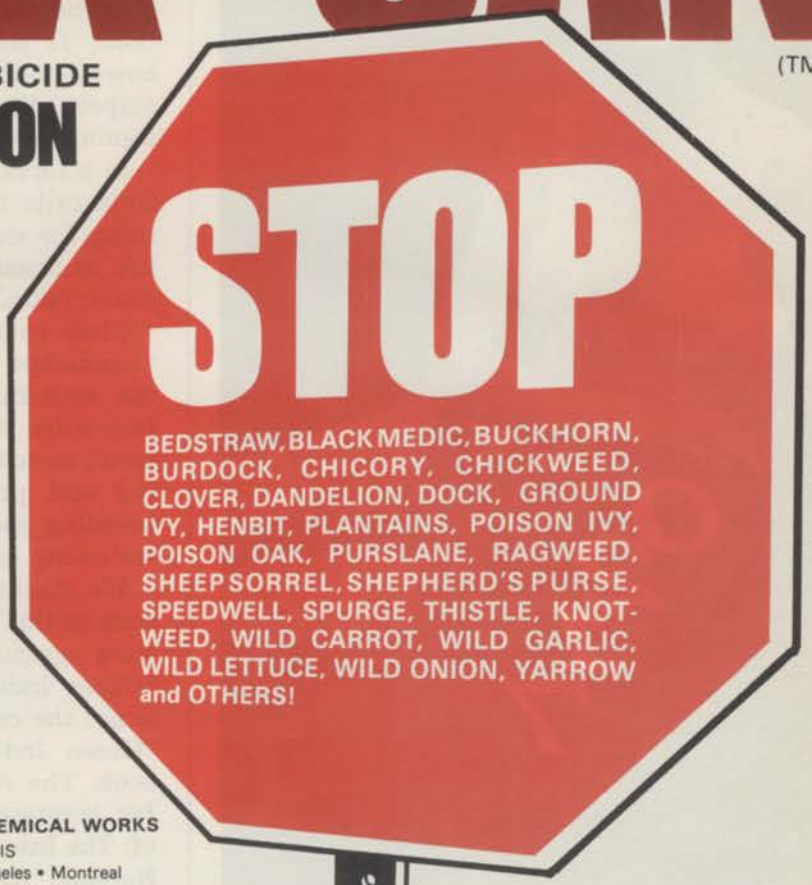
STOP NEXT YEAR'S WEED CROP NOW...WITH

TREX-SAN (TM)

BRAND BROADLEAF HERBICIDE

FALL APPLICATION

One application of TREX-SAN (TM) *now* will help prevent your established weed crop from reappearing next spring. Some broadleaf weeds may germinate and develop *after* the normal *spring* TREX-SAN application. Your *FALL* treatment will kill these off . . . destroy weed competition . . . give grass a chance . . . and remove the source of a lot of next spring's weed crop. TREX-SAN is a unique combination of 2,4-D, MCPP and DICAMBA whose synergism provides the safest most effective mixture known for the control of more than 35 broadleaf weeds, while maximizing chemical safety to turf and ornamental plantings. This three-way combination requires only a spring and fall application for complete weed control. Cost-in-use is less than for most other broad-spectrum herbicides, when product and labor savings are considered. Order from your Mallinckrodt distributor today!



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"TREX-SAN BENT"

SPECIAL FORMULA NEWLY DEVELOPED WITH EXTRA BUILT-IN SAFETY FACTOR FOR USE ON FINE SENSITIVE BENTGRASS GREENS, TEES AND FAIRWAYS!

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FYLKING KENTUCKY BLUEGRASS

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The ultimate in beautiful lawn turf when you insist on Fylking, the low-growing, ground-hugging, fine-textured grass. It produces an abundance of side shoots, and has a dense root system that strangles weeds and creates rich, green cushiony turf of unrivalled loveliness. More disease and drought resistant, Fylking has proven superior in years of international tests and actual use. It thrives cut at ¾ inch (even low as ½ inch) making backyard putting greens practical. Ask for 0217® Brand Fylking Kentucky bluegrass lawn seed or sod at your local wholesale seed or sod distributor.

Another fine product of Jacklin Seed Co., Inc.

Editorial — The Team Struck Out

It would be a good idea to secure a copy of House Document No. 229. This is the annual Yearbook of Agriculture, a printed record of agricultural progress published by the U. S. Department of Agriculture. Ours came courtesy of a Congressman, who had a limited number of copies.

This year's book is "Landscape for Living," an appropriate title for a country concerned with environmental problems and ecological imperfections. It includes background information and how-to-do-it advice to home gardeners and landscapers, discusses land planning, tree care, redesigning downtown shopping areas, and new towns.

In a foreword, Secretary of Agriculture Earl L. Butz calls the volume "a handbook with something for everyone on improving the quality of life in urban and suburban America, and in the countryside."

Close examination of the Yearbook shows that "Landscape for Living" is but a coined phrase for our well-known "Green Industry." Chapter section titles such as: plants in the living environment, matching plants to the environment, selecting and protecting plants, and searching for, breeding and propagating new plants are printed testimony of the "Green Industry" in **action.**

We would expect that a well-documented book such as this to reflect the thoughts of Federal and state agricultural leaders as well as those of the "Green Industry." But, with one exception, this is not the case. Only one organization of the true "Green Industry" is mentioned throughout the book. The American Association of Nurserymen, Inc. is referred to three times. No mention is made of: The International Shade Tree Conference, Inc.; National Arborist Association; Golf Course Superintendents Association of America; American Sod Producers Association; American Society of Consulting Arborists; Professional Grounds Management Society; American Landscape Contractors Association; as well as a host of other important organizations.

It seems inconceivable to us that 416 pages could be written on landscape for living without the counsel, advice and thoughts of leaders from the "Green Industry." We fault USDA's myopic vision in seeing the forest but not the trees. **Surely "Green Industry" leaders could provide greater insight into consumer landscaping than a research geneticist or a regulatory chief whose closest contact with the American public is at the supermarket.**

We believe the "Green Industry" derives its strength from the continued close contact with the consumer. Without it, the result will contribute nothing, as is the case with "Landscape for Living."

The Hahn Tournament Triplex outperforms any other greensmower!

Our great Tournament Triplex greensmower is now even better than ever. So good, in fact, we ask you to compare its performance and exclusive features in a side-by-side demonstration with any other greensmower on the market today. We're confident it's the most versatile unit you can buy, and guarantee it will cut equal to, or *better* than any other. Even on the finest bent greens of professional design!

We call it the world's finest greens management system. The basic 12-hp Tournament Triplex vehicle, with hydrostatic drive, powers four separate turf maintenance operations: *greensmowing, utility mowing, Verti-Cut® de-thatching* and *spiking*. Changeover takes less than a minute—simply pull a pin and disconnect quick-couple drive cable.

Outstanding features put the Tournament even further ahead. Like variable speed cable drive—lets you operate accessories completely independent of ground speed. Individual reel lifts let you cut with one, two or all three reels down at the same time—greatly reduces perimeter tracking. And individual "pre-sets" regulate precise cutting height of each reel—permit you to mow edge of green and collar at the same time.

Compare the investment in a Tournament with the equipment it replaces. You'll discover projected savings no club can ignore.

We guarantee a superb cut with the Tournament Triplex . . . every time. Want proof? Ask your Hahn Turf Products distributor for a demonstration on your *toughest* green. Or contact Hahn, Inc., Turf Products Division, 1625 N. Garvin, Evansville, Indiana 47717. Manufacturers of Hahn-West Point and exclusive U.S. distributors of Hahn-Ransomes.

Hahn

Hahn, Inc., Turf Products Division

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Government News / Business

The Toro Company has acquired Game Time, Inc., the largest firm in the outdoor institutional playground equipment field, for Toro stock. Total shares exchanged are not to exceed 369,000. In August, Toro announced sales in excess of $88 million for the fiscal year ending July 31. David T. McLaughlin, Toro president, has also announced that the company will withdraw from the landscape contracting business. The year old venture has proved to be too labor intensive.

The American Association of Nurserymen has petitioned EPA for the reinstatement of dieldrin for quarantine purposes to control hazardous soil insects. AAN listed nine reasons why dieldrin should be permitted in quarantine use, including "Alternatives to dieldrin applied to the soil to control quarantine insects in the larva stage are pesticides to control the adult insect. These require very precise, timed repeat foliar applications, thereby reducing the potential for success as well as exposing man and the environment to extreme long-range hazards."

A $4.2 million government contract covering 200 4 wheel-drive articulated loaders for the U.S. Army has been awarded the J.I. Case Company. This is the second contract for Case. In 1971, 241 loader units were supplied to the Army. Other defense contracts awarded the company include one for 283 towing tractors for the Air Force and 231 crawler tractors for the Marine Corps.

EPA's pesticides enforcement division working in conjunction with the agency's regional offices has developed a "get tough" attitude with pesticide manufacturers. In a recent aggressive enforcement drive, EPA charged six firms with criminal violations of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). One Ohio manufacturer was charged with 21 violations and, if convicted on all counts, could be fined a total of $13,500. The maximum fines for conviction on first violations are $1,000 for non-registration of a product with the Federal government and up to $500 for misbranding, adulteration, ineffectiveness and similar violations of the law. The six firms are: ArChem Corporation of Portsmouth, Ohio; Kem Manufacturing Company of Tucker, Georgia; Plantation Garden Company of San Antonio, Texas; Green Light Company of San Antonio, Texas; Bicknell, Inc. of Framingham, Massachusetts; and, Quality Plus Products Company, Inc. of Fort Dodge, Iowa.

Plant-parasitic nematodes must be considered as significant growth-limiting factors in turf and lawn management in cooler climates as well as in warmer regions, according to Dr. Julius Feldmesser and Dr. A. Morgan Golden, Agricultural Research Service nematologists. Analysis of soil and root samples have shown heavy infestations of a combination of nematodes. Experimental nematicides have been used with success. Conclusions of these scientists are that applications of effective nematicides may be worthwhile in areas where high nematode populations occur, and that the results underline the importance of safe, long-lasting, chemical control for turfgrass areas.

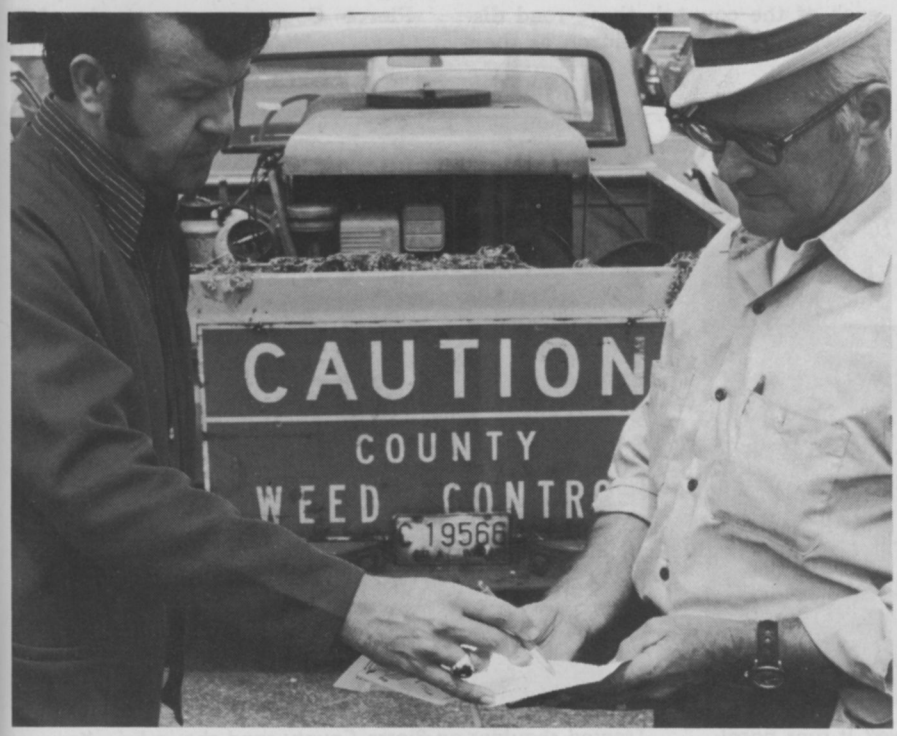
Weed Control Western Style

Tansywort checked by weed supervisor Harrison Ford is the noxious weed that helped start Pierce County weed program more than 15 years ago.

THE need and potential for modern county programs to control roadside weeds and brush has been highlighted this year in Pierce County, Washington, where a combination of spring floods and normal budget pressures put an extra load on the 125-man highway maintenance division.

Pierce County highway crews met the 1972 challenge, and one of the big reasons was the fact that an increasing share of roadside weeds and brush are now being controlled with chemicals that are quickly and easily applied, yet are safe in the environment and safe for humans, animals and birds.

Heavy winter snows, plus continuing spring rains and an unusual early heat spell brought unexpectedly high run-off from Mt. Ranier this past spring. This put extra water pressure on roadside ditches and resulted in substantial spring flooding of roads and fields; also, the high run-off ultimately produced a tight highway maintenance budget, because of the need for extra road repairs. But despite this unusual situation, Pierce County has continued to allocate funds to its 17-year-old highway chemical weed program; for the program has proved its value and county officials have been determined to keep this key weed program in operation.



Planning for weed control application brings together David Palodichuk of Van Waters & Rogers (l) and Harrison Ford. Palodichuk helps provide technical support on products.

Their decision has particular significance this year, since weed supervisor Harrison Ford and his application crews are in better shape than ever to take advantage of a newly introduced roadside herbicide—Krovar I—that controls a broader range of weeds and grasses than other compounds while standing up under heavy water pressure, as well as in periods of semi-drought. Krovar I controls the 20 most common roadside weeds in the West including culprits such as: crabgrass, barnyardgrass, pigweed, purslane, lambsquarters, ragweed, nightshade, foxtail, chickweed, groundsel, shepherdspurse, puncturevine, wild mustard, horseweed and seedling Johnsongrass. And this year Krovar I has proven to be an effective residual compound for Pierce County highway crews in the first few months following its registration and availability for roadside use.

Pierce County has about 3500 miles of roads that traverse rural, suburban and urban areas in Western Washington. When it comes to roadside weed control, weed supervisor Ford reports: "We have need for a broad-spectrum compound that can be safely used in town and country. We think we have it in Krovar I because we have been

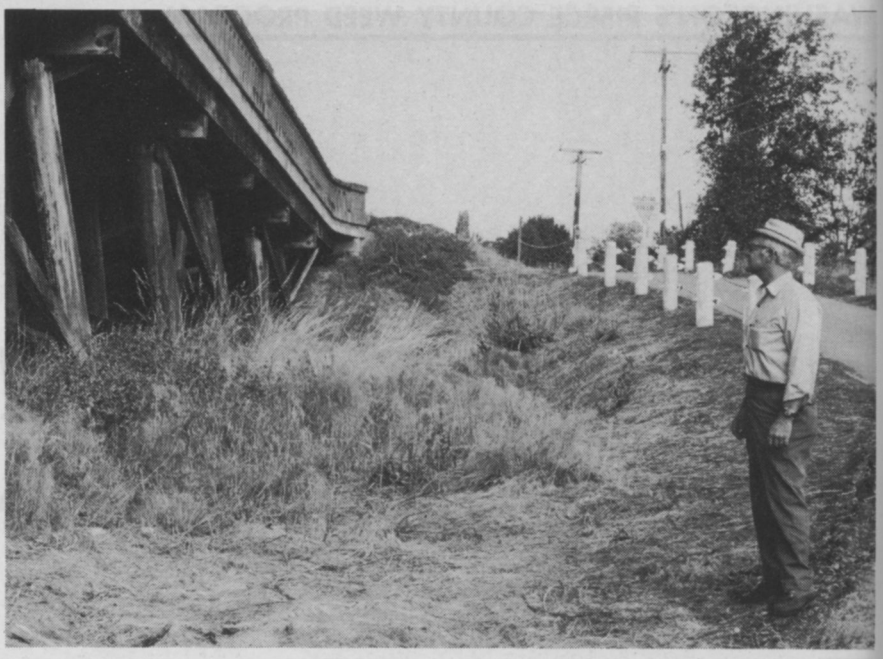
(continued next page)

using this new product in a variety of situations. It has certainly done a good job."

The Pierce County weed control program really goes back to 1955 when former weed supervisor Fred Kropf started an attack on noxious weeds such as tansy ragwort and nightshade. There was a statewide drive on these weeds getting underway. The drive involved the roads of numerous counties, since the road systems were regarded as natural corridors for the spread and propagation of weeds. In the early days, hand sprayers were used. Later some roadsides were treated with a special rig fabricated in the county maintenance shops.

Harrison Ford became weed supervisor in 1963 and in 1967 Pierce County purchased a new roadside spray rig. This enabled county crews to increase regular treatments, reaching more miles of roadside without any increase in manpower.

Today, Ford plans the Pierce County chemical weed program as an integral part of the road maintenance program. Mechanical cutting and hand clearing of bridge abutments, certain roadside shoulders and other areas are still standard practice. But chemical control is also an accepted practice. And it is clear that in many situations the chemical route is preferred—either from the viewpoint of economy or safety or simply because of the critical need to control vegetation in major roadside drainage ditches or around wooden bridge trestles, where dormant brush and weeds create unusual fire hazards.



Semi-dormant weeds and grass at base of wooden viaduct shows where weeds and grass have been treated to hold back growth. Without chemical control this growth would be head-high by mid-summer.

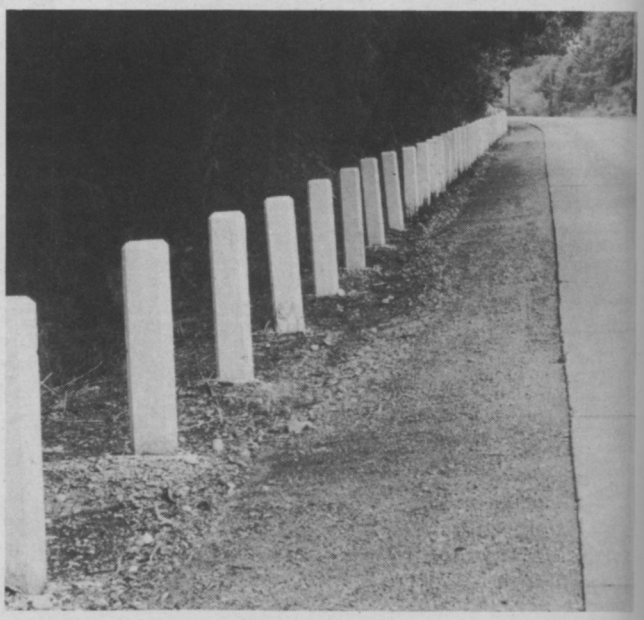
"One of the principal objectives is safety," says weed supervisor Ford. "We have a lot of miles in our county road system and do not attempt to cover them all with a chemical weed program. We focus this program on areas where it can be especially effective, and we certainly have not been disappointed."

For several years Ford's three spray crews (one handles work in each of the county's three road districts) used Karmex diuron as their basic roadside chemical. Trials by Fred Degiorgio of Du Pont and David Palodichuk of Van Waters & Rogers indicated that Krovar I would control a broader spectrum of weed species.

This year Krovar I has been adopted for most roadside weed and grass control. The roadside spray period in western Washington starts in April and runs to mid-June. During this time, the crews keep the Pierce County spray rig busy on

(continued on page 26)

Do you see an 18 inch drainage ditch above? It runs parallel to the road, but weeds and grass have hidden it from view. Vegetation also inhibits orderly water flow and represents a driving hazard.



Treated shoulder on Pierce County road shows how Krovar I has kept the roadside clean. Posts are readily visible. Nearby trees are unharmed, with Krovar I being used at a 4-pound per acre rate.

Asplundh calls it a forestry truck. You'll call it indispensable.

ASPLUNDH'S FORESTRY TRUCK MODELS L-40, 42, 45 and 50. This unit is the key to quick, efficient trimming in crowded, urban areas as well as along rural roadsides. It lifts the climber, chips the brush and dumps the chips. Asplundh's famous 12-inch chipper is mounted curb-side. The truck has a dump body that packs in 300 cu. ft. of chips. This configuration is the most compact, effective machine of its type ever produced. For further details, write or call: ASPLUNDH CHIPPER COMPANY, a division of Asplundh Tree Expert Co., 50 E. Hamilton Street, Chalfont, Penna. 18914 • (215) 887-2500.

ASPLUNDH

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How to control weeds and costs at the same time.

In industrial applications, as shown here, Tandex controls weeds along fence lines, parking areas, ditches, pipelines, sidings, storage areas, tank farms, and sign posts.

Weeds are expensive.

They are everything from a fire hazard to a haven for unfriendly rodents.

They can corrode a fence line.

Make people sick.

Destroy the drainage efficiency of a railroad's right-of-way.

Millions of man-hours and thousands of machines are fighting the war against weeds.

A very expensive war.

Weeds hit some harder than others

The weed onslaught is particularly damaging to such operations as railroads, utilities, oil fields and highways, as well as general industry.

This message is especially addressed to operations like these—it is a message about Tandex®, the soil sterilant that can drastically cut the cost of weed control programs.

Tandex—what it is and what it does:

Tandex is a urea-carbamate compound that's demonstrated exceptional control over weeds, grasses, vines, brush and the hard-to-kill woody species.

Tandex does its weed-killing job by being absorbed through plant roots.

Once applied, Tandex can last a whole season, or longer. Yet it's relatively non-hazardous to man, animals or fish.

A distinct advantage of Tandex is its stability in the soil. Put another way, this means it has minimum lateral movement—which reduces the danger to nearby trees and shrubs you *don't* want to lose.

Tandex can be sprayed or applied in dry granular form. It can also be combined with other herbicides for special control situations.

For more information, write to Industrial Chemicals Dept., Niagara Chemical Division, FMC Corporation, Middleport, New York 14105.

Tandex®
Herbicide

It gets to the root of weed problems

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Niagara Chemical Division,
Middleport, New York 14105
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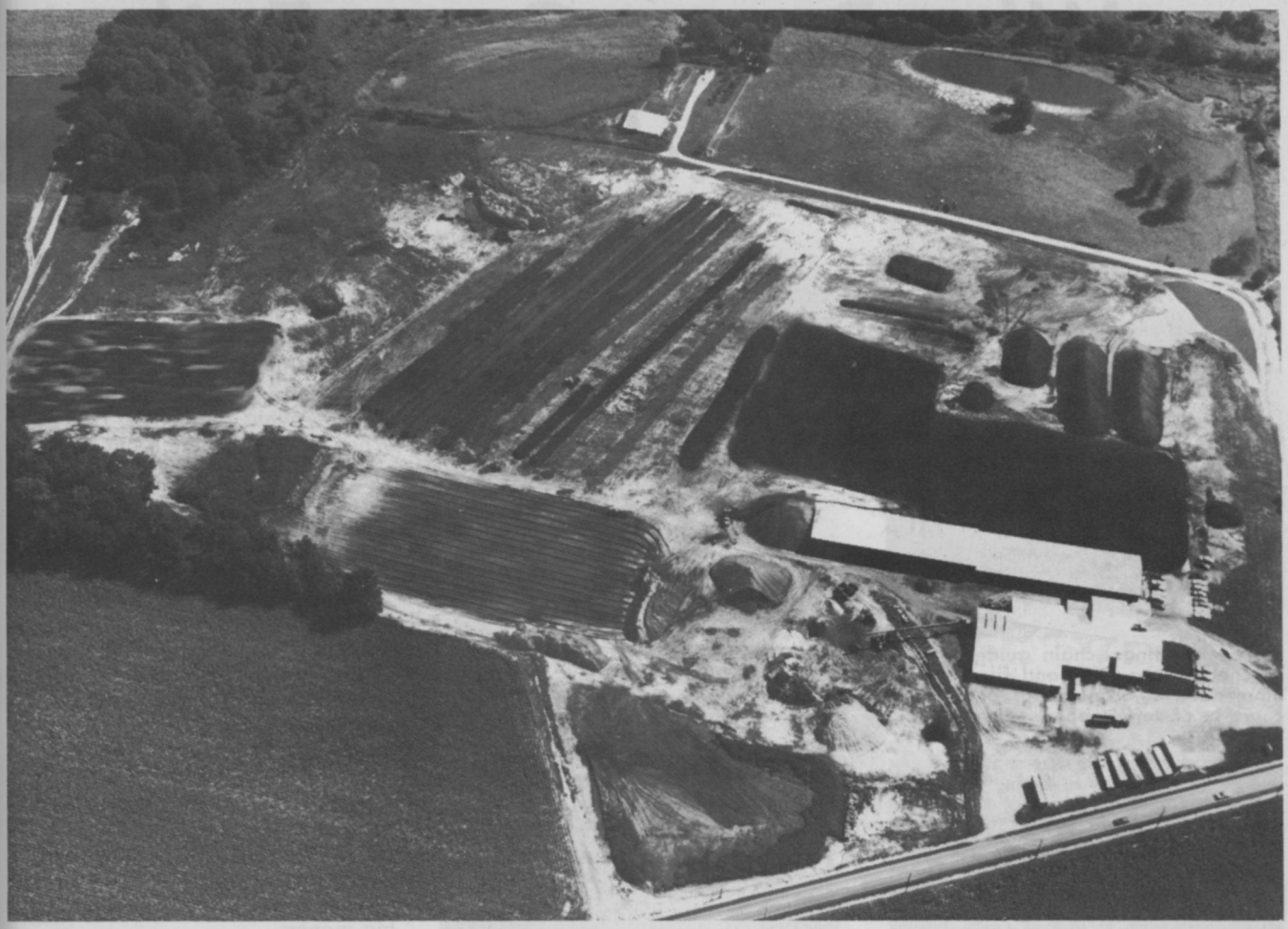


Here's the sixty acre plant of Organic Compost Corporation in Oxford, Pa. The plant takes raw manure that might cause pollution problems, puts it through processing, mixing and composting, and then packages it for sale in a variety of products such as fertilizers, top soil and potting soil. Organic Compost also has plants in Germantown, Wisc. and Fort Worth, Texas.

Soil Fumigant Aids Organic Compost

Fertilizer From Animal Wastes

Cattle, hogs, poultry and sheep in the United States produce two billion tons of waste annually — enough to equal the waste from two billion people. That animal waste is concentrated in the growing number of feedlots where animals are brought together for marketing.

Unlike other pollution-causing wastes that eventually may be controlled, manure producing animals can hardly be shut off. These animals provide the meat needs of a growing and healthy nation of over 200 million people.

Recognizing that the cause of animal waste pollution can't be stopped, the Organic Compost Corporation, with plants in Oxford, Pa., Germantown, Wis., and Fort Worth, Tex., has made a specialty of recycling the waste through a patented process of composting manure.

One product that results from this composting process, and has found widespread application, is a top soil for golf courses. The top soil is a mixture manufactured by blending composted manure, loam and a soil fumigant to provide a rich, loose humus product that controls growth of unwanted weeds.

Initially the top soil was formulated without the fumigant, called Vapam. However, on some golf courses weeds began to grow from the soil part of the top soil mixture.

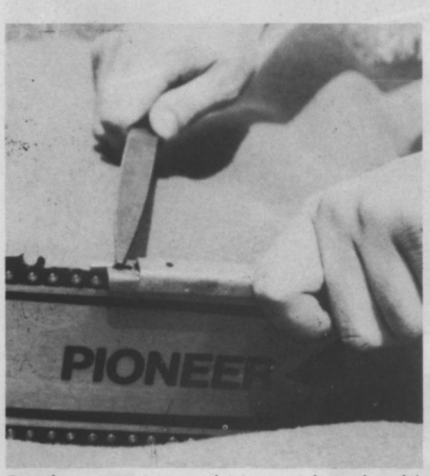
"We started out to meet specifications of the golf course superintendents by experimenting with a variety

(continued on page 38)

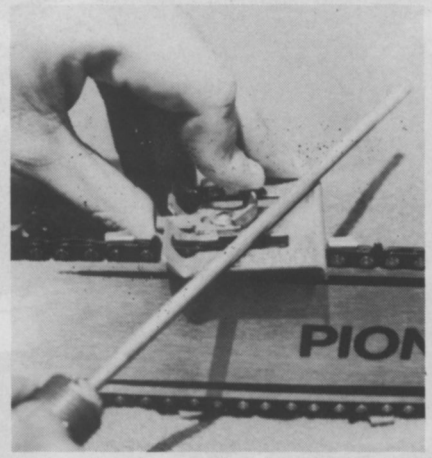
For More Details on Preceding Page Circle (130) on Reply Card

Why Power Saws Fail — And How To Avoid

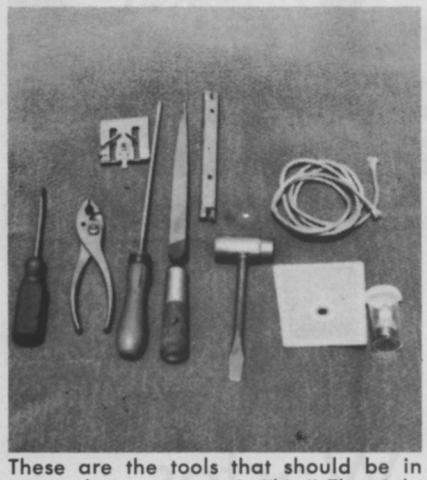
By HANK F. HARVEY, Jr.
Arborist
Rutledge, Pennsylvania



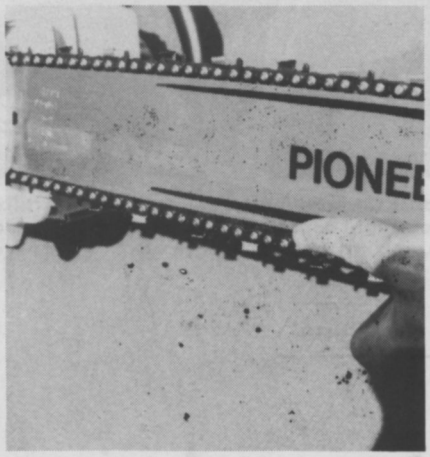
For best cuttings, chain guides should be checked regularly and filed to recommended clearance. (All photos are courtesy of Jeff Dobbs.)



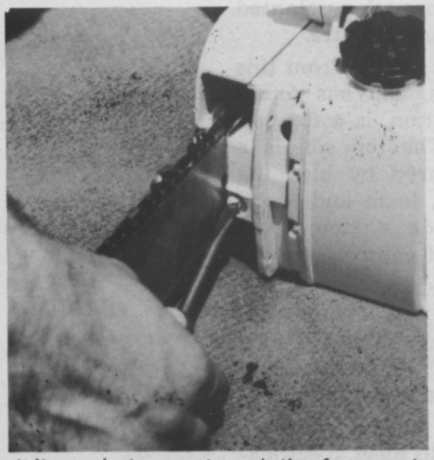
Daily "touching-up" of cutting teeth will get extra "mileage" for chain, sprocket, engine and saw operator.



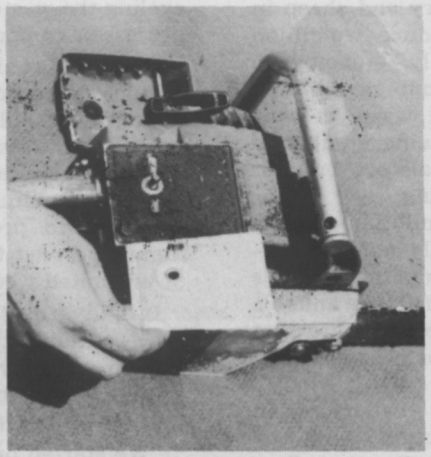
These are the tools that should be in every chain saw user's "kit." The right tools can save much needless downtime.



A pull at the bottom of the bar will tell if chain is too loose or tight. (Proper tension shown.)



Adjust chain tension daily for maximum chain, sprocket and bar life.



A spare, clean air filter is a handy item to save time. Just change filters and clean other one later. Then use it for the spare.

WHEN it comes to equipment maintenance, Art B. knows what he's talking about. He was repairing power saws before I was old enough to know what they were. He still is. When I asked him what was the major cause of power saw failure in his very experienced opinion, he said, "Simple. It's the dummies that run them."

Ouch!

Blunt? Yes, but oh, too true! Art tells of saws damaged by water in the gas tanks, excess dirt in the air filters, being run without chain oil or without oil in the gas mixture, and now with the lightweight saws, an alarming number of "fallout" casualties.

Over a period of years these results of carelessness have accounted for thousands of dollars of needless loss to Art's employer. A few dollars here, a few there. It soon adds up to big money.

Is it adding up on you?

The best investment you can ever make in a power saw is the few minutes of extra time you will need to spend to prepare your saw for use each day. There will be times when you'll be rushed and it will seem like a pain to spend the time, but your reward will come by *not* having your saw fail you when you least expect it. And when you do *not* have to repair or replace it prematurely when you can least afford it. Here's what you should do *daily:*

Sharpen chain and adjust tension on it. A power saw with a dull chain works much too hard for the amount of work it gets done. Engine overheats and sprocket wears unnecessarily. The chain gets hot and stretches. If the chain tension is too loose than can also cause stretching and sprocket wear. Or if it's too tight that will cause unnecessary friction resulting in wear on sprocket and strain on the engine.

Clean and inspect air and fuel filters. Inspect and brush off or tap off dirt and sawdust deposits. Also, take your finger on a rag and wipe out dirt or chips from near carburetor where it could be sucked in. Fuel filters should be checked for gummy shellac deposits. Even a little speck

Trouble

of dirt can cause BIG carburetor trouble.

One system I found to work out well was to always keep an extra filter available. That way I always had a fresh, clean one to put in immediately if one was dirty or oily. I would soak the dirty one in a solvent for the day and take it out to dry that night. It saved me a lot of time by not having to clean the filter when I was already rushed.

Fill chain oil reservoir and check chain oiling pump. It only takes a few seconds but many don't take the time. Actually oil should be filled every time you gas up, but it's *essential* at the beginning of the day because it's most likely empty from the previous day's use. A few pumps on the thumb-pump and a hand pull on the chain will tell if it's working o.k. The small squirt holes from the oil reservoir are easily and frequently clogged. When you're cutting with the saw it isn't always easy to tell since you still have pump pressure which you don't have when you're out of oil.

Checking these items out daily will save you hours of downtime and possible trouble on the job for an investment of a couple of minutes.

IN THE FIELD

No matter how well you maintain your saws, there is always the possibility of an in-the-field failure.

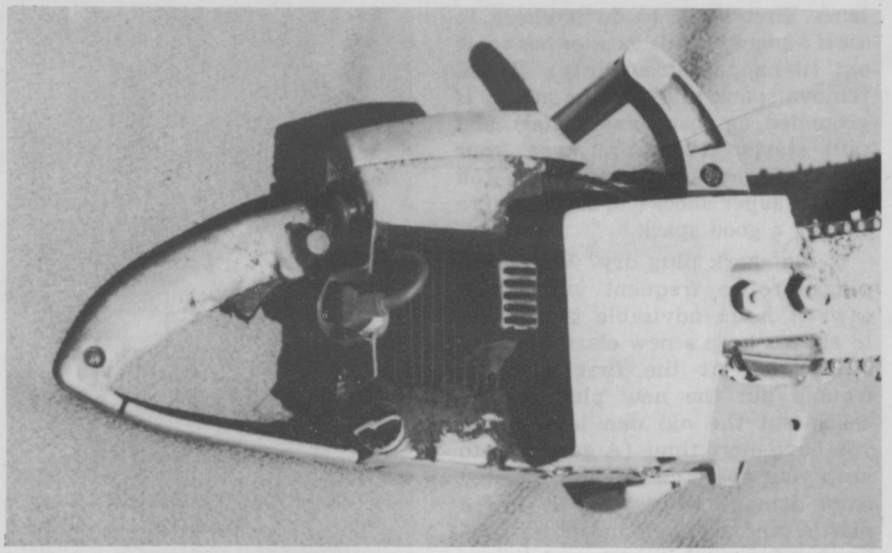
What are the most common on-the-job failures? What can you do about them?

The most common problem, according to the experts I have queried (and years of my own experience) is hard starting. This can be caused by a number of possibilities from dirt in the carburetor, to a faulty ignition to overheating to clogged fuel lines, etc.

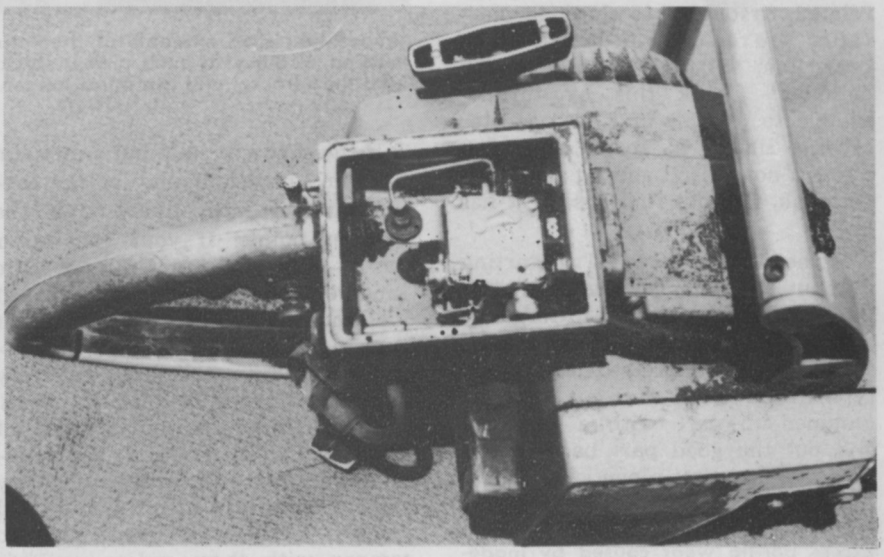
One frequent but seldom recognized cause of hard starting is too much oil in the gasoline mixture, caused by not shaking up the gas can before refueling. The oil in the gas floats to the top after it has set for a while and is poured out first. The only way to remedy this is to pour the mixture out of the saw and start again with a well mixed batch.

Spark plug failures account for the single most on-the-job starting prob-

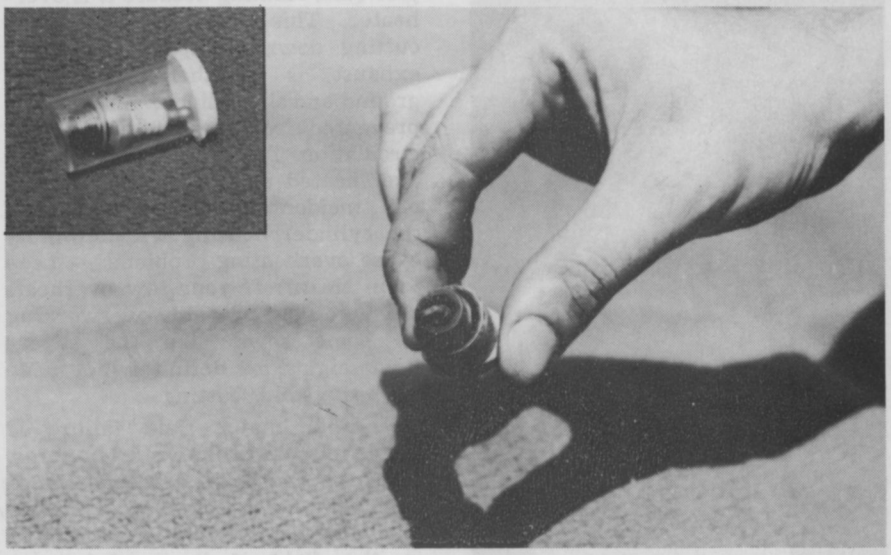
(continued next page)



Dirt and grease around spark plug can cause spark to "jump" or short out.



Dirt accumulation near carburetor can create a danger of dirt particles getting into the carburetor or fuel line, thus causing a breakdown.



Sparkplug should be checked regularly to see that it is not fouled with oil or excess carbon deposits. (Inset) An empty pill container makes a good spare sparkplug container.

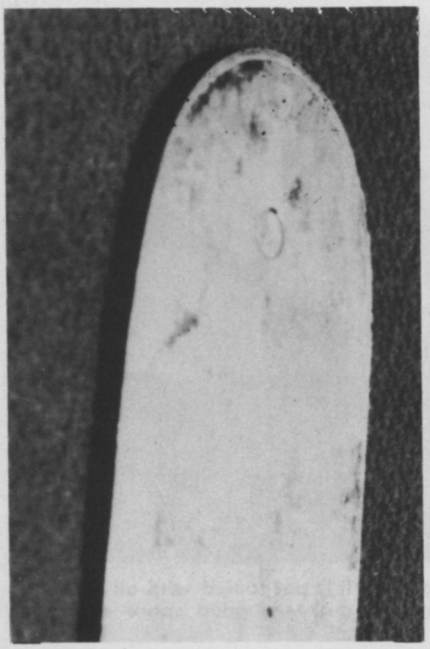
lems. First thing to do is check to see if a spark wire is loose or has come out (it happens frequently). If not, remove spark plug (make sure it is grounded against some metal) and pull starter **(warning: keep your hands off the spark plug unless you want a super shock)** to see if you're getting a good spark.

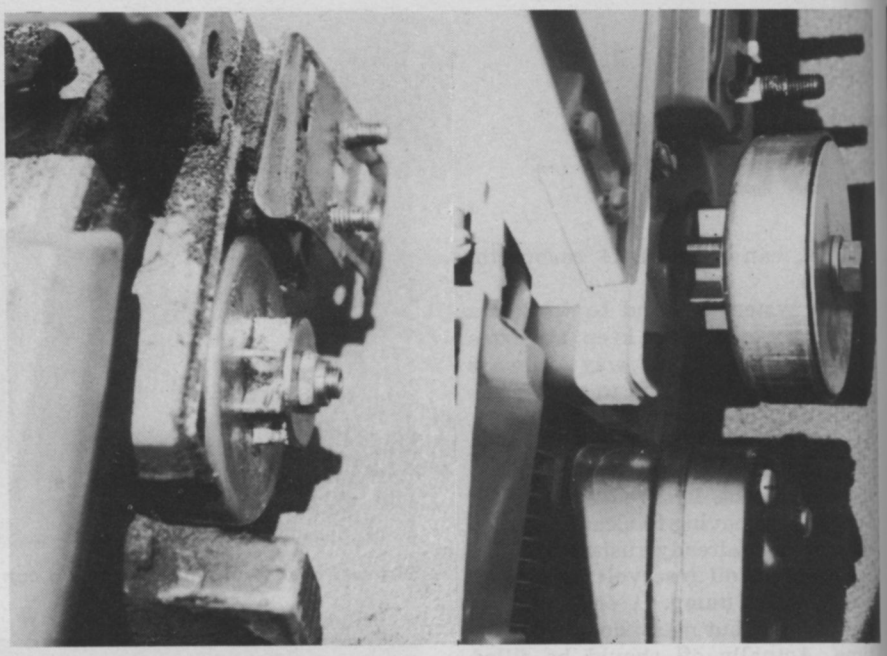
Is the spark plug dry? Wet spark plugs are so frequent with chain saws it is an advisable time saver to always keep a new clean-and-dry spare one. At the first show of trouble put the new plug in and check out the old one later when you have more time. (A good way to keep your spare clean and protected from damage is to wrap it in a plastic sandwich bag and put a rubber band around it, or to put it in a plastic pill bottle.)

If your trouble is not spark plug-related, first thing to check is gas—(after you're sure you aren't out of gas) line. Is fuel getting to the cylinder? Check this by turning switch to "OFF" and pull starter several times. Is spark plug wet now? If not, it isn't getting gas. Open gas tank, fish out fuel hose if it has one.

Is the filter clogged? Try starting without the filter to see. If that is the problem be sure not to forget to put in a clean filter as soon as possible. (If it is a pressed-felt "plug" type filter, you can cut off the gummed-up part with a penknife and put the good part back in the holder till you get a new one.)

Excess bar-tip wear caused by inadequate oiling. (Note heat line.) Abuse like this will cut bar life in half. Use lots of oil and check oiler frequently.





Above left is an example of premature sprocket wear caused by improper chain tension. Photo at right is a new sprocket. Keep your power saw in proper tension and the sprocket will last much longer.

If the saw will start but won't run with any power, it may be the carburetor but most likely it is the breaker points. If your carburetor has a high speed adjustment (the kind you can turn with your fingers) it's worth trying to adjust it till it runs right. If you can't get any improvement from that, it is probably a bad condenser or burned points. Both are shop jobs and should not be attempted in the field. The regular carburetor adjustments are very seldom responsible for in-the-field failures. *Avoid the temptation to tamper with them unless you are very certain of what you're doing.*

Sometimes a saw runs poorly or just quits running because it is overheated. This often happens when cutting down stumps, because the exhaust is smothered into the ground and the cylinder fins are also prevented from getting enough air circulation. The only remedy for an over-heated engine is to let it cool off. (incidentally, dirt in the fins on the cylinder housing will definitely cause overheating problems — **keep them clean!**) If your saw overheats often, you are probably overworking it. Some saws, like the super-lightweights, are definitely not made for heavy-duty cutting.

Another major field failure is pulled out or broken starter cords. These can cause real headaches. Once again, it's not a bad idea to have a ready-to-go spare. Only change these in the field if it is almost an emergency. And never attempt it in the field for the first time. *Do* try to repair one in your shop sometime and try to get good enough to do it in the field if you have to.

Most guys pull them out because they extend the cord too far when starting. If you have a good wrist snap when you pull, you shouldn't need more than about a 6" stroke to start your saw.

Practice it. It's a lot *easier,* too. Especially up in a tree.

Tools you should always have with your power saw at all times would include spark plug wrench, a screwdriver, chain file, pair of pliers and /or vice grips. Spare parts should include spark plug, fuel filters, starter rope.

PERIODIC MAINTENANCE

In addition to the daily care you give your saw, there are a few items which should get attention at regular intervals.

A real good cleaning with an air jet (most gas stations have them) will get dirt and grease out of the recoil starter, cylinder fins, sprocket housing, and from around the spark plug and the carburetor.

A good wide down with a clean rag after the air cleaning will remove the dirt-collecting oily film.

Now check the saw for excess wear; on the sprocket, bar, etc.

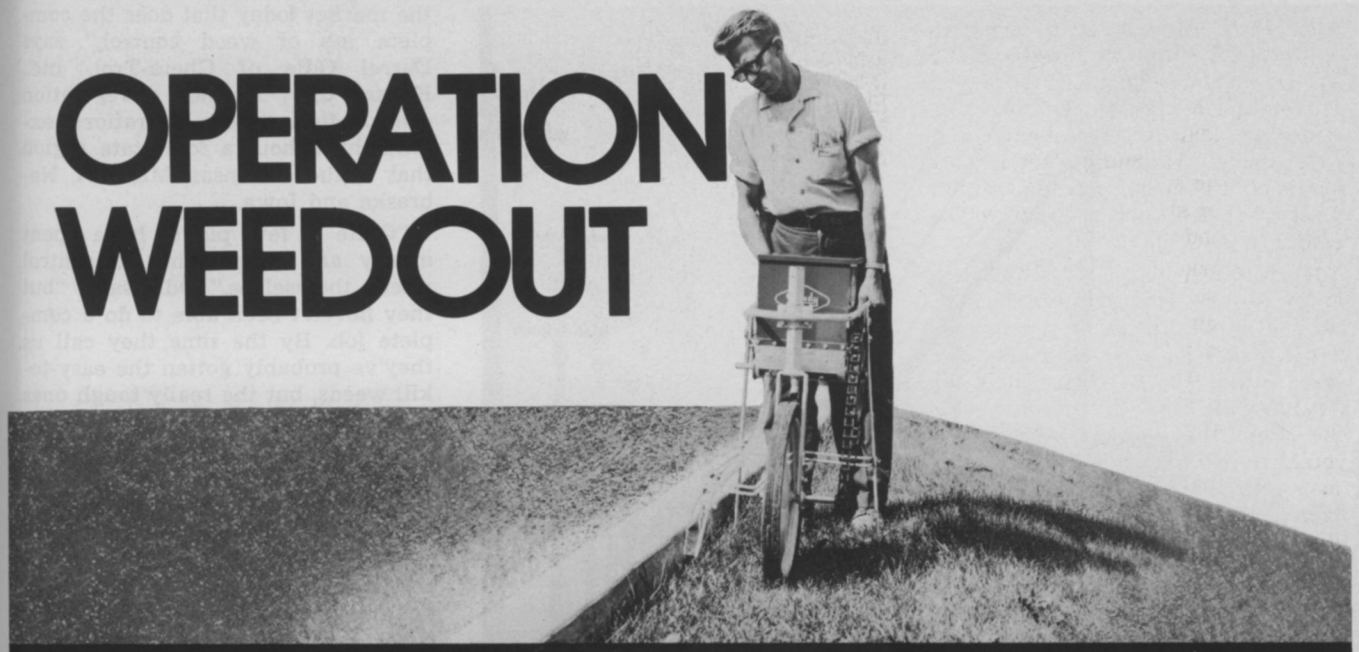
Tighten up all loose screws, nuts and bolts.

Check spark plug and replace if necessary.

Check the air and fuel filters and replace if necessary.

(continued on page 34)

OPERATION WEEDOUT



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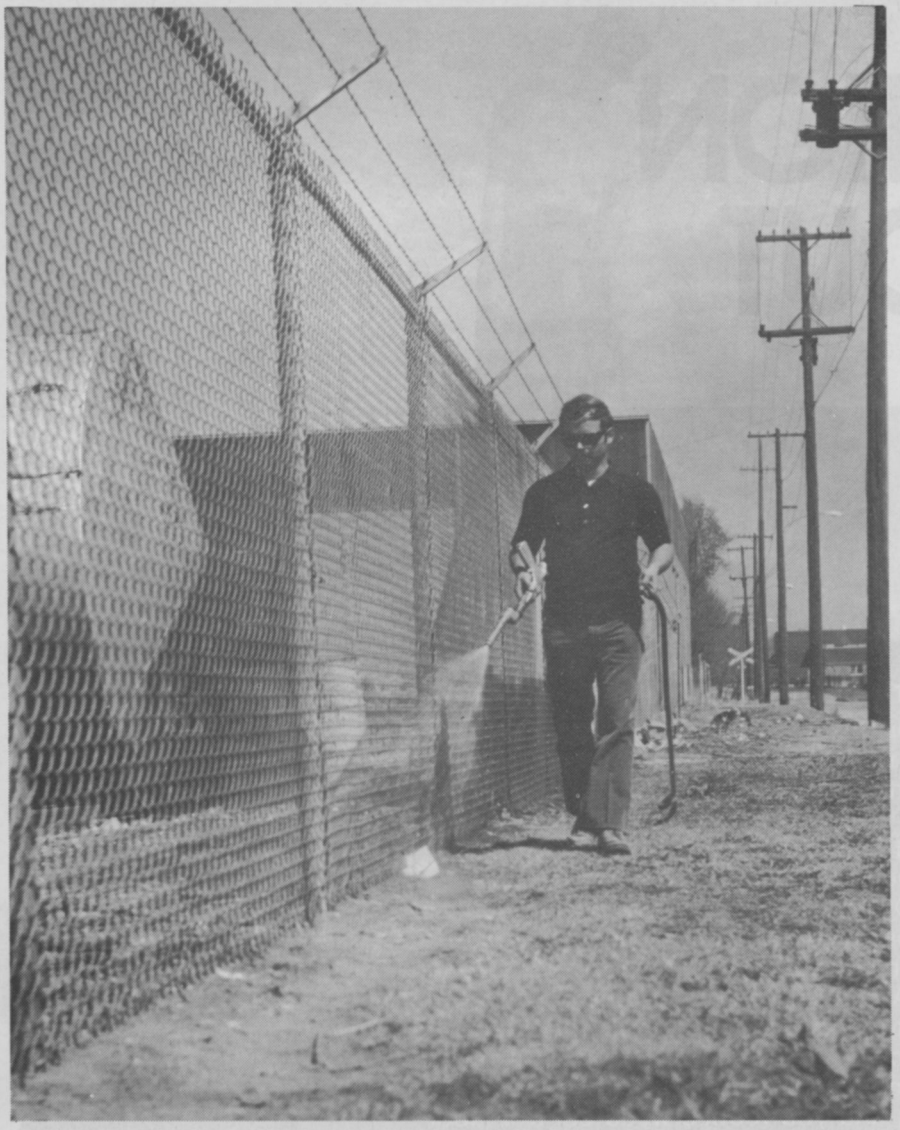

Industrial weed control offers firms a number of advantage — safety, appearance and public relations are as important as any. Here Rich Tate of Chem-Trol sprays an industrial site in the Kansas City, Kansas area. Although weed problems are often similar, differing locations usually demand a wide variety of treatments.

KNEE DEEP IN WEEDS

Chem-Trol Weed Control
A Business With A Future

NOT so many years ago, most industries, if they worried about weeds at all, probably went no further than a little trimming and mowing here and there.

In those days, the management of most industrial plants wasn't concerned about presenting an attractive image, but that's changed. Many of today's plants are surrounded by elaborate landscaping and there is a general concern in most businesses for a neat, clean appearance; not only for a better "image," but because a neat, clean plant means added safety from fire and personal injury.

Plant managers are finding out that cleaning up plant sites isn't as easy as it might seem. Although weed killers and machinery are readily available, they usually aren't the answer for a complete job.

"There just isn't one chemical on the market today that does the complete job of weed control," says Darrel Odle of Chem-Trol, Inc., Kansas City, Kansas, a vegetation control firm whose operations extend throughout a four-state region that includes Kansas, Missouri, Nebraska and Iowa.

"Quite a few plants have spent money and time trying to control weeds themselves," Odle says, "but they haven't been able to do a complete job. By the time they call us they've probably gotten the easy-to-kill weeds, but the really tough ones have them stumped.

"We've found that just about every job requires at least three different chemicals, and some may take as many as five or six to get complete control. That's why it's really not a job for somebody who doesn't know anything about it. He could spent an awful lot of money before finding the right chemicals to do the job on a particular site."

"We specialize in bare ground control," points out Bud Tolman, the other partner in the eight-year-old operation. "Our jobs range from a steel mill to pipelines and utility lines. And every one is different.

"Every job requires a different chemical application," Odle adds. "We usually base our bare ground control on Princep herbicide, or Pramitol, which is a soil sterilant. Then we'll add whatever else the job requires. Each chemical does a different job. Princep gets the germinating weeds and Pramitol is especially important in our first application to knock down the weeds that are up. Then, in the early spring, we generally add a contact herbicide like Dalapon or TCA."

"The main reason industrial areas are so rough to clean up," Tolman comments, "is the fact that they're usually located in areas that have never had anything but weeds. That means the ground is thick with seeds, and you find just about every kind of weed imaginable.

"The percentage of perennials is high, too. They just take over when nothing is done to control them, and they're always tougher to kill."

The weed control business is more than enough to keep Chem-Trol's staff on the run most of the time. In fact, Odle says, there are only a couple of months out of the year, usually January and August, when the trucks aren't constantly on the job. And that just about leaves enough time to service equipment so it's ready to go during the busy stretches in early spring and fall.

"And there is considerable more potential to explore," Odle concludes.

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Limb Lopper

For More Details Circle (103) on Reply Card

THE Sunnyvale Golf Course, in its fourth year of play, was developed to increase the recreation offered by the Parks and Recreation Department of Sunnyvale, California. Designed by architect Dave Kent, the 6,400-yard course takes advantage of the natural hazards found in the highly industrialized San Francisco Bay area, and provides a much needed oxygen oasis.

The location of this golf course is probably as unique a land use as anywhere in the country. It has a major freeway running through the middle of the course. It has another one running along its east side. The fairways serve as a landing pattern for nearby Moffett Field, a naval air station. Where the highways and airfield permit, the golfer sees only industrial parks and manufacturing plants. And the soil from a worn-out walnut orchard had to be made to grow turf.

But none of this daunted superintendent Dick Viergever when he started construction in 1966. To connect holes 3 through 13 to the clubhouse side of the course, a tunnel was built under the highway. Since the highway and the golf course were being built simultaneously, the highway department included the tunnel in its plans.

The highway department maintains the fence and their side of the right-of-way. The problems on the golf course side have been solved by providing ground cover along the fence and by landscaping to hide the highway and protect drivers from misdirected golf balls. These mechanical and natural barriers also prevent movement of highway vegetation control chemicals onto the highly specialized golf turf. By proper placement of tees, fairways, and greens adjacent to the highway, there is minimum, if any, likelihood of golf balls going over the fences and onto the roadways.

Wind and noise add to the hazards designed into the course. Low flying aircraft increase the golfers' need for concentration. Constant winds from the bay can play havoc with the flight pattern of the golf balls. Part of the old walnut orchard serves as another natural site hazard. The last four holes are built through the low growing trees — only low-growing plant material can be used in landscaping because of the low flying aircraft.

A superintendent since the days the horses pulled the mowers as they fertilized, Dick Viergever knew how to select turfgrass and how to grow it.

Starting with Kentucky bluegrass

SLOW RELEASE NITROGEN

Golf Course Labor-Saver

and creeping red Fescue, fairways and tees were established. Fylging and Windsor have been used for overseeding. The bent greens are Seaside overseeded with Penncross.

To keep grass in condition for twelve months play in California, the fertilization program is considered as critical as the availability of water. Irrigation equipment was designed into the course, and five lakes were bulldozed to provide year-round reservoirs. Slow-release nitrogen was the fertilizer choice for fairways, greens and tees.

Fairways and tees receive annually 8 to 10 pounds of nitrogen per 1,000 square feet. Under normal conditions, three applications do the job —spring, summer and fall. Two applications are 10 pounds per 1,000 square feet of 38-0-0 ureaform. The third application is 10 pounds per 1,000 square feet of 21-8-8 with two-thirds of the nitrogen from ureaform.

Between May and October, the dry season, fairways and tees are watered three times a week. During the rainy season, irrigation is used only as necessary.

Greens receive annually 14 pounds of nitrogen per 1,000 square feet. A 27-6-10 with two-thirds of the nitrogen from ureaform has been used more than any other fertilizer. Greens are aerified at least twice a year, and Osmocote 21-5-5 has been used successfully with aerification. Under stress conditions, greens, as well as fairways and tees, may receive supplemental soluble nitrogen such as ammonium sulfate.

During the dry months, greens are watered four times a week, and as needed between November and April.

Greens require the proper attention to soil conditions during maintenance as well as during construction. All greens at Sunnyvale Golf Course are topdresed four times a year with a mixture of sand and organic. This not only keeps soil in condition but takes care of thatch by breaking it down and keeps a level putting surface.

With labor costs taking up to 65 percent of budget and equipment 20 percent, mowing practices are rigidly followed to keep bent-grass greens one-quarter inch or less and bluegrass fairways and tees one inch or more.

According to superintendent Dick Viergever, "Another reason the slow-release nitrogen fertilizers are used almost exclusively is to keep down the number of annual applications. This frees the labor force for those jobs chemicals and nature can-

(Continued on page 32)

Brush Chipper and Stump King vs. Dead Wood

Wayne's Dynamic Duo are more than a match for Nature's Dastardly Dropouts. They take on the brashest brush and surliest stumps and cut them down to no size at all.

What makes Brush Chipper and Stump King the uncontested nemeses of Dead Wood? A number of things.

The BRUSH CHIPPER eliminates more brush in less time than any other method. Its exclusive six-sided disposable bed knife has 50% more life expectancy than conventional four-edged blades. The dynamically balanced rotor is machined from a solid forging. And under its hood is no popcorn popper, but a big hairy 318 cubic inch V-8.

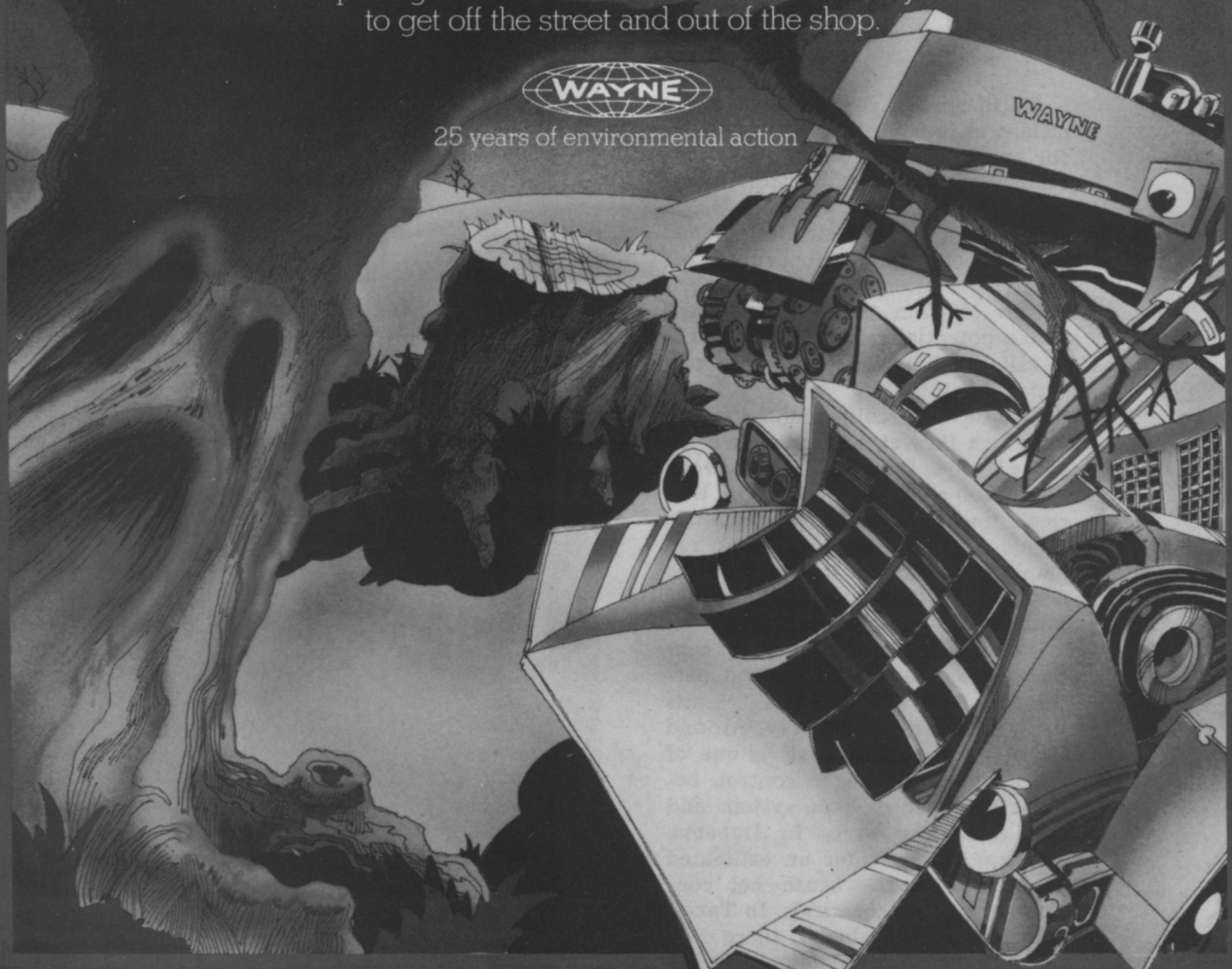
The STUMP KING has an exclusive swivel mounted cutting head that gives you a 64 inch reach—enough to do the job without relocating.

A hydraulic control lets you adjust the unique 147 inch traverse to match the toughness of the stump. And with a cutting depth of 27 inches, you can get rid of *all* of the monster.

Why not write for our heroic brochure on the Brush Chipper and Stump King? There must be a lot of dead wood you'd like to get off the street and out of the shop.

WAYNE

25 years of environmental action



WAYNE MANUFACTURING CO. 1201 E. Lexington Street. Pomona, Calif. 91766. (714) 629-4071

For More Details Circle (113) on Reply Card

This is a grove of sweet gum and persimmon near Conway, Arkansas. It's so thick you can hardly walk through it, yet control is nearly 100 percent.

Here's a spray crew on the job out where the big firs grow—the Pacific Northwest. Spraymen are applying Banvel to rid area of smaller trees so that Douglas fir can be replanted.

Victorious War On Brush

Brush species that have been resistant to previously used herbicides for brush are now succumbing to a relatively new brush control chemical called Banvel.

Produced by Velsicol Chemical Corporation, the product until recently was oriented mainly to agriculture. Within the last two-three years, potential for control of hard-to-kill brush species has developed fast.

"We haven't really found a specie on which Banvel, has not shown activity," says Don Telge, a railroad vegetation control specialist for Velsicol. "In some areas of the country, though, some users find that red maple is a specie that should be watched, in that Banvel sometimes controls it, sometimes not."

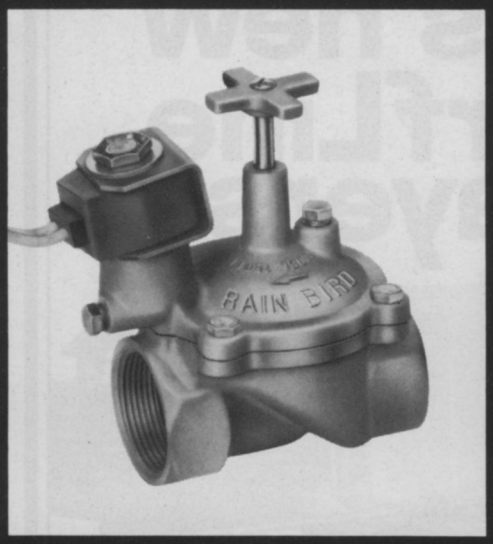
It's the difficult species to control, such as ash, hickory and persimmon, where Banvel's results show up most dramatically. Around Oklahoma, blackjack oak is one of the toughest species to control, because of its large root system and hard and waxy leaves. In Alabama, sassafras accounts for an estimated 40 percent of the brush not controlled by other chemicals. In Texas, Louisiana and Alabama, there is a

(continued on page 50)

Jack Woods of Public Service Utility, Tulsa, Oklahoma, examines a dead winged elm.

This willow is 35 feet tall. It's dead and so are the vines surrounding it. Banvel controls brush a long time after application. The chemical becomes part of the cell structure.

Sure it's ugly,



but it does a beautiful job.

Slow-open, slow-close remote control valve stops water hammer damage.

It's an ungainly looking thing. But in doing its job, our Series E valve is absolutely beautiful.

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Explaining how it works is simple. Because it works just fine. With a slow-opening and closing action that takes all the strain off pipe and sprinkler heads. And a built-in grit filter that eliminates solenoid hang-up. And really, when it comes to remote control valves, who gives a hang about looks? After all, a remote control valve isn't meant to be seen. Or heard!

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- Adjustable fast hitch makes it usable with tractors and carts.
- Molded fiberglass tank (100 gallon capacity) has prop-type agitator and built-in sight gauge.
- Plunger type spray pump (10 GPM at 300 PSI) handles liquids as well as wettable powders.
- Boom covers 15-foot spray swath, uses nylon, drip-proof diaphragm check nozzles, folds and stores on built-in arresting hooks.
- Has convenient hose connections for high pressure spray gun work.

Thoroughly field proven, this unit has already shown people in all parts of the country how to handle their grounds maintenance jobs efficiently and economically. Shouldn't you look into this one now? See your Myers TurfLine Dealer or write today for our new catalog.

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Myers. The Name That Works For You

WEED CONTROL *(from page 12)*

ditches and rights-of-way. They apply a basic 8-foot swath to shoulders and ditch bottoms, but with a two-nozzle fixed boom spray rig controlled from the cab, the spray operator can easily modify the spray pattern to conform to the needs of roadside terrain.

The Pierce County spray rig has two tanks (one holds 500 gallons, the other 250 gallons) and two 100-foot hoses with spray wands, as well as the fixed boom. This provides maximum flexibility in spray applications. Different materials can be carried in these tanks to handle a variety of weed problems and brush problems around bridges and culverts.

Normally, brush control spraying with 2,4-D is started in the spring, but then in the fall Ford's program is focused on alders and blackberries, while the winter spray effort is concentrated on dormant brush control with Tordon. In addition, Pramitrol pellets are used during the growing season for weed and grass control around signs and markers, so cutting crews do not have to be held up by excessive growth near these signs.

"We have made a switch to Krovar I in 1972," reports weed supervisor Ford. "The idea was to control more weeds along the roadside, so our spring treatments would be even more effective than they have been. We usually treat at a 10 to 15 pound rate on road shoulders and drainage ditches that have never received any chemical treatment before, but we use a 7-pound per acre for road sections previously treated. We mix the Krovar I and a quart of 2,4-D in 100 gallons of water and we drive our spray rig at about 10 miles per hour when we are spraying."

Spray operations, Ford notes, are often more economical than hand work. An example is a 400-foot wooden viaduct. It once took a six-man crew a week and a half to clean out brush at the base of this viaduct. Now a two-man spray crew can apply a brush-control compound in a few hours, freeing the other men to tackle other needed road maintenance tasks. The chemical approach provides longer control and protects the viaduct against the hazards of fire by keeping dead weeds and grass out of the area.

Similarly, it often takes a highway crew a full week to clear a typical weed-choked drainage ditch. They need five trucks and a Barton

(continued on page 30)

For More Details Circle (125) on Reply Card
For More Details on Preceding Page Circle (116) on Reply Card

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Aquatic Weeds – A National Problem

IN a climactic display of roll-call voice voting, members declared the Hyacinth Control Society Inc. to be the official name of the 12-year old organization "for at least another year."

Although a direct mail straw ballot earlier indicated that many members desired to change the name to the Aquatic Weed Science Society, open floor discussion apparently swayed the majority's opinion in favor of the older established name.

Site of this year's July meeting was Miami, and while the sun only partially cooperated, attendees willingly participated in the meeting and the associated fun activities. The unofficial registration count showed an increase over 1971 attendance with over 200 attending.

Unlike other meetings of the Society, this year's convention was attended by a greater number of persons outside the imaginary periphery of serious aquatic weed and vegetation problems. Papers presented by scientists, aquatic weed specialists and industry representatives indicated that concern on controlling aquatic vegetation has reached beyond the "gee-whiz" stage in many midwestern states.

In fact, the underlying tone, rumored by more than one member to another, was that aquatic weed science has come into its own. A few members even speculated future meeting sites in Iowa, where Hydrilla was reportedly discovered this year.

Following a greeting by Steve Clark, mayor of Miami, President Robert J. Gates addressed the delegates. "Environmental improvement is, in effect, good housekeeping. It begins with the personal habits of individuals. . . . There are no bystanders. Everyone is directly involved, even when the subject is restricted to pesticides," he said. "... We must not sweep any of our problems under the rug. On the other hand, we have the obligation to insist that regulation and control of pesticides be based on sound information and the benefit/risk equation soberly evaluated. . . .

"The greatest threat to all people, in my opinion, is the coalition of those who would sacrifice future economy in the name of ecology, and

(Continued on page 36)

Grouped by a static display of airboats and assorted equipment used in aquatic weed control, members of the Hyacinth Control Society listen to Bob Blackburn (standing right) discuss application methods. This year the society toured the extensive facilities of the USDA Research Center at Fort Lauderdale.

Cutrine-Diquat Combo Registered In Florida

Attention hydrilla in Florida. Look out!

The State Department of Agriculture of Florida has just registered Cutrine and Diquat as a tank-mix for the control of hydrilla and other submerged weeds.

According to Applied Biochemists, Inc., manufacturers of Cutrine, hydrilla has been choking Florida's lakes and canals for more than a decade. It is not readily controlled by previously registered products. The combination of Cutrine and Diquat have a somewhat synergistic effect to control this noxious weed.

Cutrine is Federally registered in all 50 states for algae control in potable water reservoirs, irrigation water, lakes and ponds. The Florida registration of the combination permits use in the same areas as the Federal registration of Cutrine alone.

Research on the tank-mix combination was started three years ago. Robert D. Blackburn and his staff at the USDA Agricultural Research Service station in Ford Lauderdale experimented with a wide variety of chemicals and chemical combinations to provide the most effective, economical and safest means of control.

Field testing in 1971 indicated that the combination of Cutrine and Diquat was the most exceptional performer from the standpoint of effectiveness and economy.

Blackburn reported that the combination required less chemical to achieve control than other products tested. He further observed that there were no fish kills and that weed desiccation was slow.

The Florida registration recommends four gallons of Cutrine and two gallons of Diquat be used per acre, mixed with enough water to allow even distribution of the herbicide in the area being treated.

Application is made by pumping through hoses as the hoses are dragged approximately one foot above the canal or lake bottom. Hoses should not be dragged on the bottom and should be no further than three feet apart.

Waiting periods recommended for the use of Diquat should be followed after application of the combination.

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WEED CONTROL *(from page 26)*

shovel to do the job. But a single properly-timed spray will keep this ditch free of weeds and grass for many months, so the highway manpower and heavy machinery can be assigned to other road repair jobs.

Weed supervisor Ford coordinates the Pierce County weed and brush control program under County Engineer William Thornton, who in turn handles road maintenance under the county board of commissioners. The essential aim of the program is safe roads with minimum road maintenance costs. This can be a difficult task, since the county extends from Mt. Ranier to the Pacific Ocean and includes virtually every type of possible highway and weather condition.

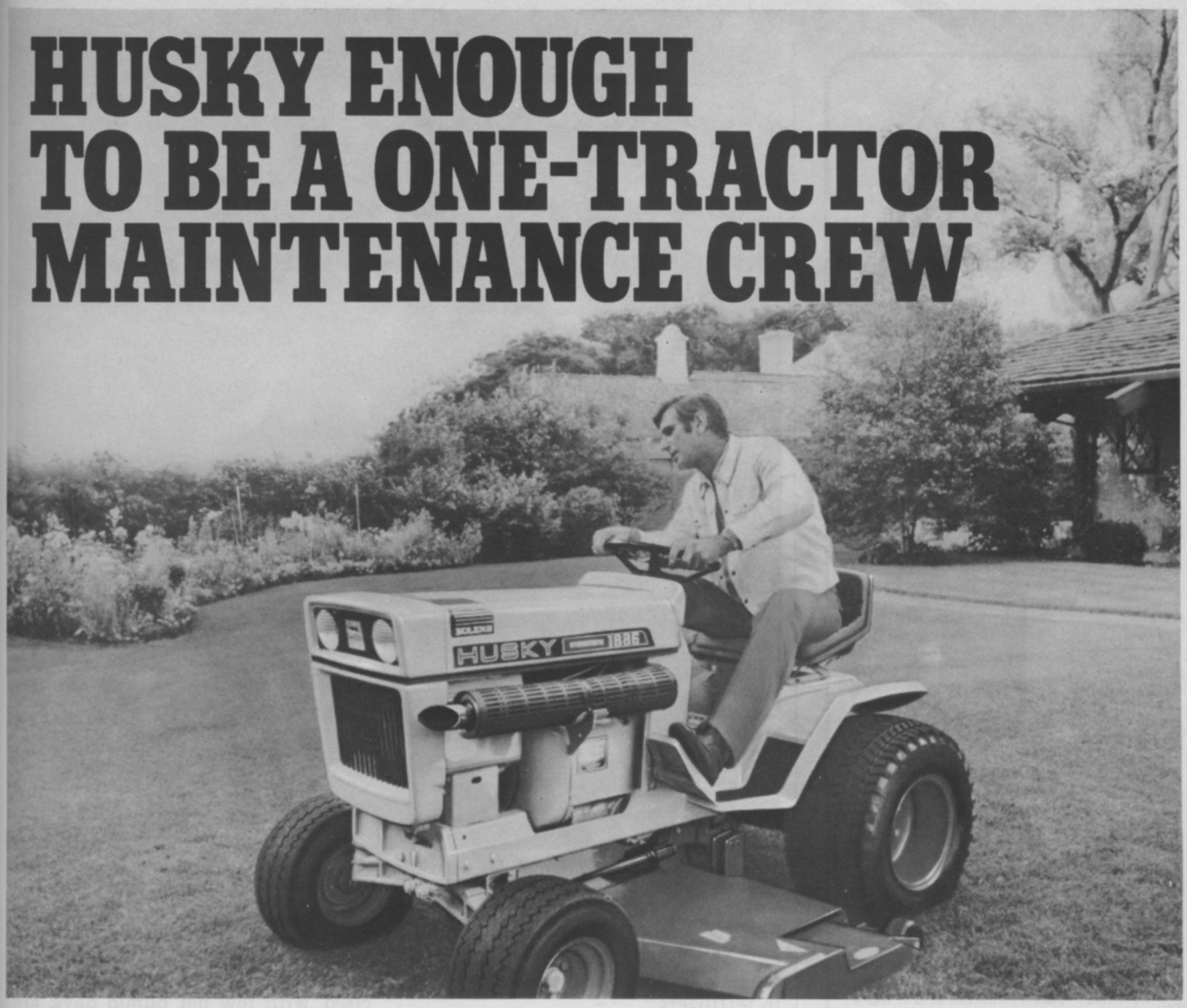
Road maintenance costs have been climbing. Today roadside mowing, for example, involves $20-$25 per acre for labor; and equipment repairs can be costly, too. Usually they will average $35 a day for every day equipment is operated. Roadside litter and unexpected, hidden obstacles often put mowers or tractors out of operation. These costs have made chemical weed and brush programs more attractive than ever. While only about one mile in seven in the County is now receiving chemical weed treatment with Krovar I, the savings achieved through the chemical program are significant, especially this past year when the County was hit with extra flood damage to its roads.

Priorities on county roads to receive chemical weed treatments are set by road supervisors, road foremen, and weed supervisor Ford. It is his responsibility to keep in touch with overall needs and to help train district crews, while looking for new developments that will help the County get better weed control without massive increases in budgets. Ford carries on the county program to control noxious weeds as well as the weed program related to road maintenance.

The Pierce County weed and brush program has come a long way in recent years. Weed supervisor Ford would be the first to say that it can make substantial gains in the future. New technology and new compounds, like Krovar I, have helped bring a new dimension to the weed program. What was learned last year about Krovar I, for example, persuaded Ford that this compound belonged in his program. What is being learned this year about Krovar performance on Pierce County roads will be built into plans for still better weed control in the years ahead.

Krovar I was applied to this roadside. Note that when a trained crew applies the spray, there is a wide margin of safety to the adjoining farm crop. Supervisor Ford helps train his applicators.

HUSKY ENOUGH TO BE A ONE-TRACTOR MAINTENANCE CREW



Big claims? Not at all.

This Bolens 18 hp tractor hitches up to 35 separate attachments. So it cuts big jobs down to size in a hurry; mowing, snow removal, tilling, cultivating, grading, terracing, weed cutting, loading, sweeping, seeding, fertilizing, hauling, aerating, scarifying, spraying, fogging, trenching, thatching, compost shredding, post-hole digging, and many others.

It shifts from one job to the next quickly, because Bolens exclusive collar-locking PTO system makes it a snap to change attachments. Foot pedal hydrostatic transmission lets the driver get through a job quicker. No time is lost in reaching to shift. A touch of the foot does it all.

Of course, any tractor that claims to be a one tractor maintenance crew would have to have a two-spool hydraulic system, large fuel tank, an inside turning radius of 54", and a twin-cylinder engine. The Bolens 18 hp Husky has all those, plus power steering and a three-point hitch as optional equipment.

Interested in hearing more on how this Bolens tractor can do your big jobs quicker, easier, cheaper? Mail the coupon below. But do it today! There's a big demand for a one tractor maintenance crew.

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We haven't found a broadleaf weed in any kind of grass that we can't control. We're still trying, but we feel we've found their match. It's called "Trimec" Turf Herbicide and it has a clean, solid swing.

Save time and effort in the control of Broadleaf weeds. "Trimec" can give positive control of those hard to kill broadleaf weeds in the cool season as well as in mid-summer. "Trimec" is a new patented herbicide. It enables turf specialists to get the weed control job done with greater safety to grass, with less product and fewer applications than with other herbicides now being used.

Whatever the lie, fairway or green, choose **GORDON'S FAIRWAY BROADLEAF HERBICIDE** and **BENTGRASS BROADLEAF HERBICIDE**. They both contain "Trimec" Turf Herbicide and you will be the winner of the broadleaf doubles match.

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Safe from speeding automobiles above, golfers use the underground tunnel to connect holes 3 through 13 to the clubhouse side of the golf course.

not do. About 12½ percent of the annual budget goes for chemical helpers, with some 10 percent of this in fertilizers."

Sunnyvale Golf Course was constructed to provide good air circulation. Thus, fungicides are usually used only in winter months. The big three in this area south of San Francisco, with few hot humid days, are dollar spot, Fusarium patch, and Helminthosporium spp. The newer

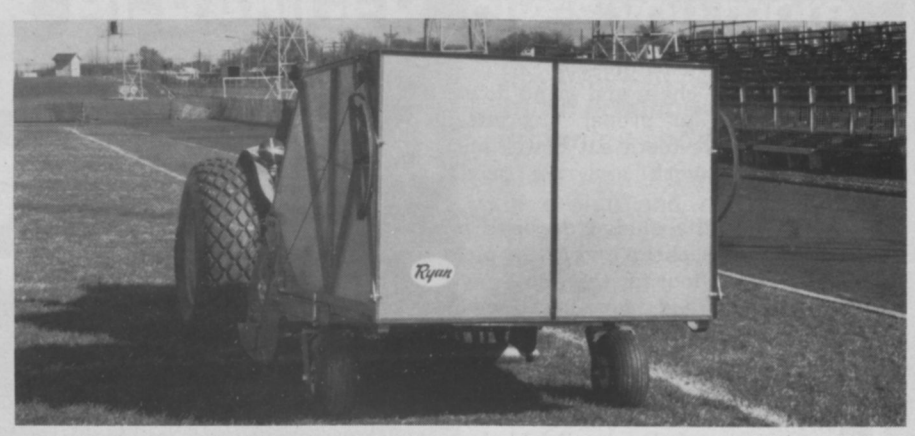
Sunnyvale Golf Course serves as a landing pattern for nearby Moffett Field, a naval air station. Maintaining a golf course in A-1 condition is no small job for superintendent Viergever. He constantly battles air pollution and noise pollution. Success with his turfgrass is due in part to a good fertility program involving the use of ureaform fertilizer.

Superintendent Dick Viergever (1) and park foreman Mario Nappi check the condition of a new planting of a California Redwood.

broad-spectrum fungicides give good control. The materials most widely used by Dick over the years have included the cadmium compounds for dollar spot and mercury compounds for the latter two.

Two applications of Dacthal a year keep out annual bluegrass and crabgrass. Twice a year materials such as MCPP and 2,4-D are used to control broad-leaved weeds. Chlordane is used for serious infestations of sod webworm. Even with knowledge of proper use of these chemical helpers, superintendent Viergever needs all the daylight hours to keep the course in top shape for over 75,000 annual rounds of golf.

When asked if growing turfgrass was harder in this area of concentrated air pollution from ground and air traffic, Dick replied, "The issue is not growing the grass, but the contribution the grass and landscaping plants are making to help this air pollution. Turfgrass is an important oxygen factory. It takes the carbon dioxide out of the air and returns the much needed oxygen. It's too bad that there cannot be more oxygen factories constructed to help the ecology of such areas with highly concentrated air pollution."



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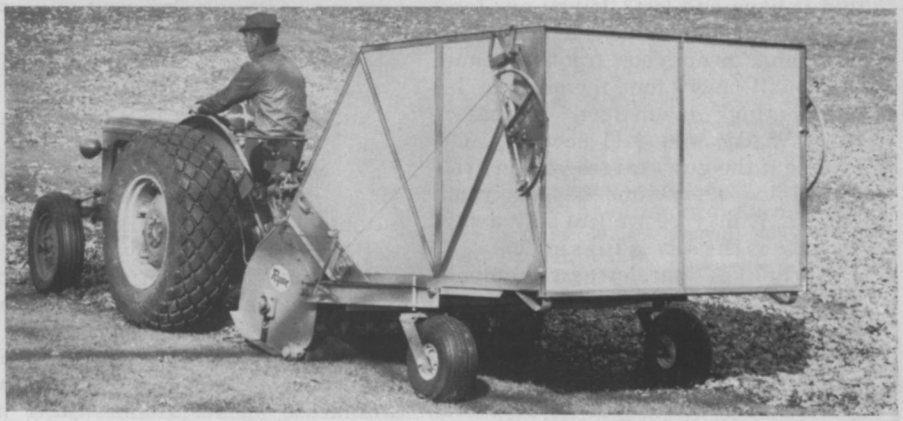

that also sweeps turf debris

...and flail mows.

Got an acre or more of turf to maintain? Then you need the Ryan Grounds Groomer. It dethatches, sweeps and mows large turf areas. Even prepares seed bed for overseeding.

The tractor-drawn Grounds Groomer has vertical blades that slice and literally blow lifted thatch, leaves, twigs, pine needles and cones, and other debris into the big 5-cubic-yard hopper. Even picks up eucalyptus leaves.

Reel is designed to dethatch while mowing. Reel is easily converted for complete flail mowing of rough grass. Reel can be raised or lowered from the tractor seat... and hopper can be dumped. Use the versatile Grounds Groomer all seasons for general turf maintenance.

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POWER SAW FAILURES

(from page 18)

Remove the chain and grind down tooth guides to proper clearance. This will make teeth cut better and make your work and the saw's easier.

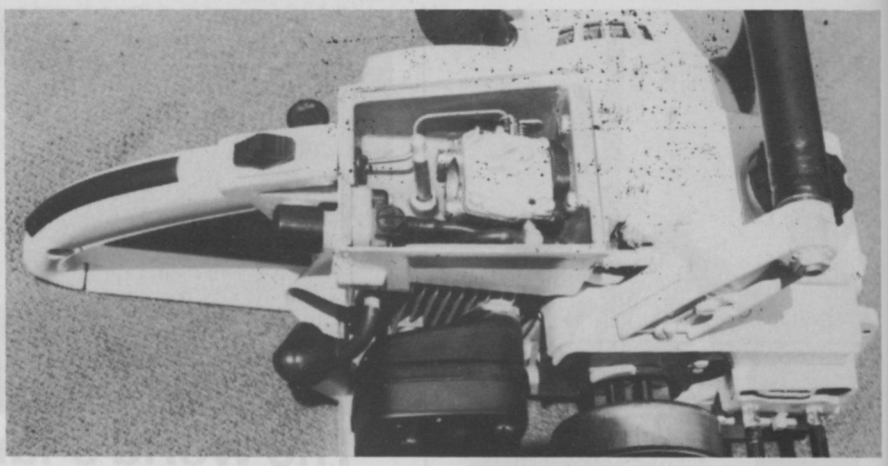
Clean out the sludge deposits in bar groove. (A cheap awl or ice pick makes a good tool for this job.)

Check bar-end for heat wear (caused by not using enough chain oil). If it has sharp or uneven edges, file or grind them off, *lightly*.

If your saw is not starting easily or not running well, you should consider a professional tune-up. When did it have one last? If you are fortunate enough to have a good saw mechanic near you, frequent tune ups will pay for themselves in eliminating down-time, increased performance and fuel economy. Of course if the guy charges you an arm and a leg every time he gets your saw in, it may be well to stay away as long as the saw is running o.k.

Curtailing carelessness among operators is a good way to get more miles out of your saw between shop stops. One major saw-killer is long falls from tree tops. This is largely preventable. One way is for climbers to utilize a good saw-holding device which attaches their saw securely to belt or saddle when not in use. (There is at least one good one commercially available from arborist supply houses.) This eliminates the need to hang saws on branches, and rest them in forks of limbs, etc. where they can easily fall to their destruction.

Better yet, use an extra utility line to hold the saw. This is the safest method and also allows the trimmer to move about freely in the tree.



When was the last time your saw was as clean as this new one? A clean saw will run better, longer.

(See WTT, August 1972, page 18)

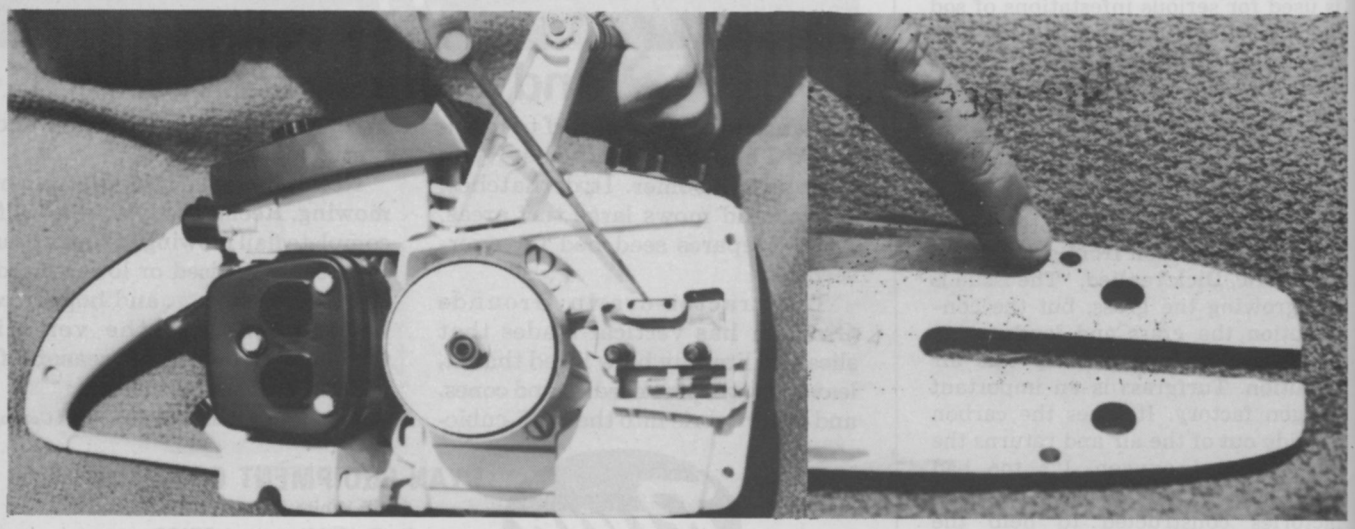
Another way to prevent premature saw damage is to make sure every saw operator knows never to let chain cut into ground or dirt on stumps or other wood that has dirt on it. And be sure every operator uses plenty of chain oil (it's lots cheaper than new bars, chains and sprockets).

Here's a good tip an old-timer told me to save plenty of $$: Use old crankcase oil for chains. Sure, it's "had it" viscosity-wise, but it has plenty left to go around the bar once or twice. In fact, some claim it is better for chains because it isn't as "stiff" as new oil. I don't know about the last part, but old oil is definitely good enough for chain oiling, very cheap to use, and certainly in keeping with the current trend of "recycling" everything possible.

Basic common sense tells us most of other principles of non-abuse of a power saw. Like not "revving" it up when it's cold or not actually cutting wood or by being careful where we set it — to avoid contact with heavy metal that could crack housing or other tools that could damage teeth of chain. Or not to let saw run out of gas, thereby letting fuel line suck in dirt particles which could clog it up or foul the carburetor. Or not to store saw for long periods with gas in the tank which could get old and stale, build up gum and shellac to cause trouble.

Most of these things are obvious when we think about them. **If** we think about them!

Jim Pinto of Pinto, Inc., a power saw dealer near Philadelphia, has fixed literally thousands of power saws and other small engines. He tells me "most all power saw failures are due to negligence." Ten years of School-of-Hard-Knocks experience tells me he's right. It is a lot less grief and definitely cheaper to use your head *before* a power saw failure than your precious time and hard-earned cash *after* one.



Clogged oil holes can cause a chain to run dry. Photo at left shows where to check on the engine housing to determine oil flow. Photo at right is where oil enters the bar. Keep both clean.

First Olympic Victory Copped By British

The first Olympic victory to the upcoming Olympic Games has already been claimed by the British. The main stadium and other important grassland areas are being mown with British machines.

Contractors responsible for turf maintenance at the Olympic site have selected 18 large Ransomes machines to keep the grass in top competitive condition.

Matter of fact, Ransomes machines have been mowing the grass of the only exception.
main stadium at all Olympic Games since 1946 with Australia as the

Those machines used at the Munich, Germany Olympics include: eleven 36 inch Mastiffs, three standard motor triples, one junior motor triple, two hydraulic power 5/7 gang mowers and one 24 inch ride-on.

Rapid Advance To Controller New Toro Feature

The Toro Company has introduced a modification to its 8-station electric controller, a special "rapid advance" feature.

The new feature eliminates most of the time lag between stations which formerly occurred when all the time of a respective station was not used for watering. As soon as each pre-set watering period is completed, the controller now automatically advances to the next station.

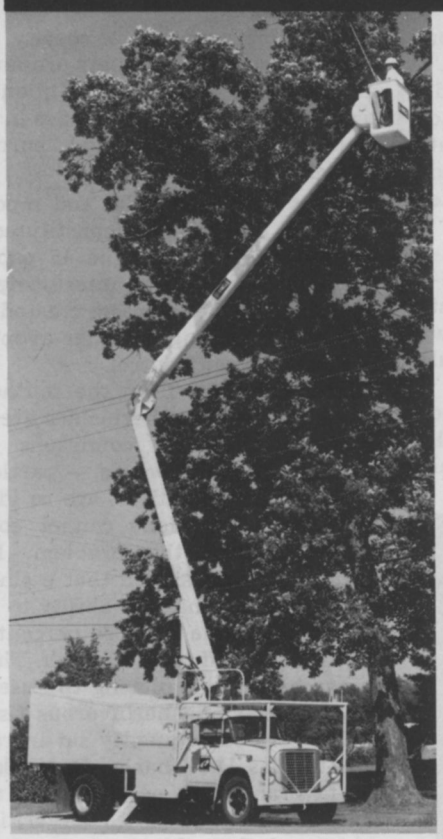
According to David W. Good, Moist O'Matic Division's director of marketing, the new controller is designed for residential and small commercial sprinkler systems and operates Toro's 1-inch, 1½-inch and 2-inch electric valves.

He also reported the availability of a new 4-station hydraulic controller specially equipped with a 110-to-24-volt transformer and a 24-volt timing motor. This had been developed, he said, to conform with those municipal codes that restrict the use of 110-volt lines to operate a controller.

The 4-station controller operates Toro's ¾-inch and 1-inch pin-type hydraulic valves. Since it utilizes the water coming from the sprinkler mains through the pin metering device of the valve to open and close the valves, clean water is recommended.

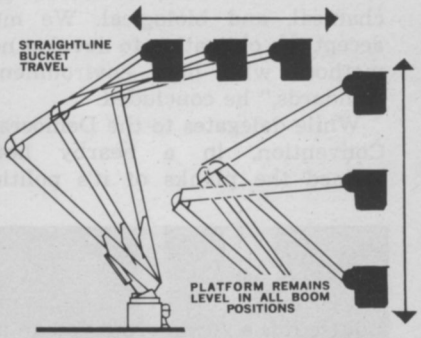
Both controllers may be automatically or manually actuated. Both have a 48-hour program dial and allow from 0 to 30-minute timing per station in 90-second increments.

HI-RANGER® gives you more



. . . that's needed for safer, more productive tree trimming and line clearing.

More than 20 years refinement in design and construction account for the No. 1 position HI-RANGERs hold among owners and operators of mobile personnel towers for overhead work.



Accurate, positioning, stability, and precise movement are possible, as shown, only with HI-RANGER.

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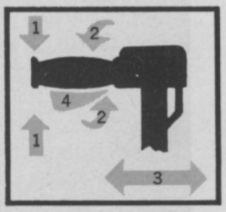
(3) forward & back
(4) safety interlock release



Owners and operators of HI-RANGERs "wrote the book" for features exclusive with HI-RANGER . . . ☐ single hand 3-D bucket control, ☐ automatic safety interlock system, ☐ stronger tapered upper boom, ☐ power-reserve accumulator system, ☐ constant-angle upper boom movement with straight-line bucket travel, ☐ self-leveling bucket, and ☐ maximum safety with faster, easier operation for more work at low cost.

HI-RANGER Aerial Towers meet the "American National Standard for Vehicle-Mounted Elevating and Rotating Work Platforms ANSI A92.2-1969," as required by the Williams-Steiger Occupational Safety and Health Act of 1970; Part 1910, Occupational Safety and Health Standards; Section 1910.67.

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Dursban For Fog Application Registered By EPA

Dursban insecticide has now been registered by the Environmental Protection Agency for use as a thermal fog for control of mosquitoes.

The new Dursban formulation is available to mosquito control districts and municipalities for application as a thermal fog to control adult mosquitoes in residential and recreational areas, parks and other non-cropland locations.

Dursban insecticide, developed by Dow Chemical U.S.A., was introduced in 1966 and has been widely used for the control of mosquito larvae. In addition, the product has proved to be extremely valuable for the control of lawn and household insects and has become a standard material for the control of cockroaches.

Mosquito Fogging Concentrate is intended for use by public health officials and trained personnel of mosquito abatement districts and other public mosquito control programs.

AQUATIC WEEDS *(from page 28)*

those who are unwilling to pay for our past and present problems ..." he continued. "The self-satisfied, selfish interests that refuse to recognize and accept the fact that there are aquaic weed problems and a need for their control is quite another problem.

"We must go forward in weed control on all fronts, chemical, mechanical, and biological. We must accept the obligation to develop new methods with high environmental standards," he concluded.

While delegates to the Democratic Convention, in a nearby hotel, formed the planks of it's political platform on problems of society, the general tenor of the papers presented at HCS concerned the solution to problems of ecology, pesticides in the equatic environment and current pesticide legislation.

Roy P. Clark, chief, pesticides branch, Environmental Protection Agency (EPA), Region IV, Atlanta, discusses current pesticide legislation.

Trials with herbicides and reports on their performance constituted a goodly percentage of the 45 papers presented. But it was interesting to note the added enhusiasm created by speakers reporting on other avenues in aquatic weed control.

Most members from the southern states realized that herbicides are an effective tool, but conditions for growth of aquatic weeds — particularly water hyacinth — are so ideal that herbicides alone cannot completely control the problem. For example, it was shown that a single water hyacinth has the ability to increase in volume by 6,000 percent in the short period of one month. Thus, researchers are exploring the use of fungi, insects and herbivorous fish.

Members consequently sat in rapt attention as Dr. Charles R. Walker, chief, branch of pest control research, USDI, discussed "a critical review of the white amur and its evaluation for aquatic plant control in the U.S." He said that tests indicate that "the fish could survive in any latitude in the U.S.; in fact, it is quite salt tolerant." However, it is subject to many diseases. Additionally, it could become a potential threat to sports fishing if not controlled. Walker called the white amur a superfish, capable of growing to a weight of 20 pounds in three years.

Other speakers including Dr. David L. Sutton of the University of Florida said that when the white amur was fed duckweed the conversion factor of vegetation to flesh was greater than that of chickens. It was also pointed out that the white amur is docile, very gergarious and highly excitable.

Robert J. Gates, 1972 president, turns the gavel over to Brandt G. Watson, 1973 president of the Hyacinth Control Society.

A safe assumption is that the white amur is like the moon rockets at Cape Kennedy — still in the exploratory stage.

While it may be said that insects, snails and certain plant fungi hold potential promise, the general belief by many members was that these control procedures must also be further perfected. None can currently surpass the economic results from the application of herbicides. B. David Perkins, USDA, Fort Lauderdale, pointed out that presently 24 weeds in the U.S. can be biologically controlled by 52 species of insects.

Mechanical weed control was also discussed during the convention. C. Brate Bryant, Aquamarine Corp., Waukesha, Wisc., presented an interesting cost analysis of harvesting weeds in four areas of the U.S. Additionally, Merle R. Chaplin, Winter Park, Fla. described his new aquatic weed harvester in detail. Richard Messinger, Amchem Products, Inc. spoke about Directa-Spra, a new low drift aquatic herbicide applicator that has been extensively tested by the Florida Game and Fresh Water Fish Commission, Aquatic Weed Section. Robert D. Eron, a familiar face to most members, was missing at this year's meeting. However, his new Eron-Aerator and water treatment device was discussed.

This year members also visited the USDA Research Center at Fort Lauderdale. Analytical, biological, entomological and fishery laboratories were toured culminating with a static display of aquatic weed control equipment used by the station. The group was then served a catfish

(continued on page 51)

Members informally discuss aquatic vegetation control during a break in the formal program.

—insect report—

INSECTS OF ORNAMENTALS

BAMBOO APHID
(Takecallis arundinariae)

MARYLAND: Specimens reared from dwarf bamboo *(Shibataea kumasasa)* near Chevy Chase, Montgomery County, May 5-10, 1972. This is a new state record and a new record for the Eastern U.S. This species, known previously from California and Oregon, discovered on foliage of its host grown as potted house plant taken in November 1971 near Purcellville, Loudoun County, Virginia. Examination of original planting and five additional bamboo species during May showed no indication of infestation.

BAGWORM
(Thyridopteryx ephemeraeformis)

ARKANSAS: Heaviest infestations seen in years on untreated evergreen shrubs in Fayetteville area. OKLAHOMA: Damage heavy (70-90 percent defoliation) on sycamore trees in scattered areas of southern Mayes County. Also noted on young black locust in area.

PLUME MOTH
(Platyptilia pica crataea)

CALIFORNIA: Larvae damaged pelargonium nursery plants in Smith River, Del Norte County; and geranium plants in Santa Barbara, Santa Barbara County, and in Sacramento, Sacramento County.

TREE INSECTS

COOLEY SPRUCE GALL APHID
(Adelges cooleyi)

PENNSYLVANIA: Much heavier than previous years on many spruce at residences and in Christmas tree plantations in and near Auburn, Schuylkill County.

ELM LEAF BEETLE
(Pyrrhalta luteola)

NEW MEXICO: Leaves on most Siberian elms in northern San Juan County skeletonized by heavy populations.

SOUTHERN PINE BEETLE
(Dendroctonus frontalis)

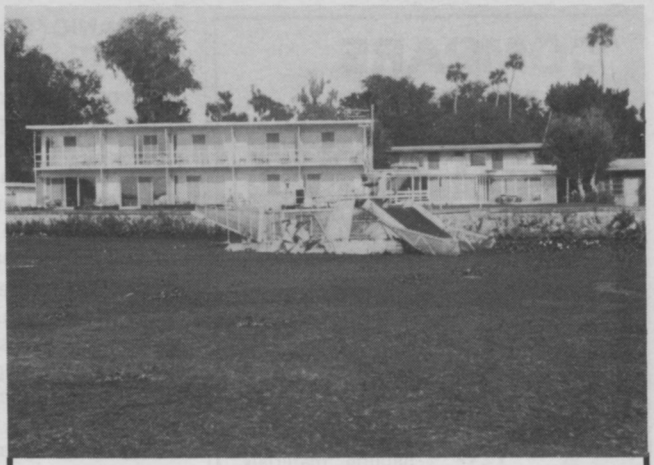
ARKANSAS: Minor outbreak occurred in southeastern Ashley County. About 200 trees at each of 6 locations in area infested.

JACK PINE BUDWORM
(Choristoneura pinus)

MICHIGAN: Infesting most jack pine stands throughout northern Lower Peninsula. Larvae heavy in northern Ogemaw County, browning of foliage obvious throughout most of Crawford County. Damage appears less than in 1971 in southeast Grand Traverse County.

FALL CANKERWORM
(Alsophila pometaria)

WEST VIRGINIA: Larvae caused 70-80 percent defoliation of maple, oak, and other trees on 1,900 acres in Dolly Sods area of Tucker County. MICHIGAN: Defoliated several square miles of forest in southwest Cass County.



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ORGANIC *(from page 15)*

of weed killers," says Floyd Tamblingson, vice president of Organic Compost, and manager of the Oxford, Pa., plant. "Finally, we tried Vapam soil fumigant and found it to be less expensive than many others, highly effective, and easy to apply."

Stauffer Chemical Company's Vapam is an all-purpose soil fumigant that enters the soil, fumigates it, and then disappears. It can be used, as Organic Compost does, by incorporating it in top soil and potting soil products, or it can be applied directly to lawns, flower beds and gardens.

With its top soil success for golf courses, Organic Compost then went to the homeowners and found equal acceptance. That success has continued in the many lines it sells, and yast year, Organic Compost experienced a 40 percent increase in its sale volume. Other end products are fertilizer and potting soil, which is similar to the top soil. They are packaged in five to 80 pound bags and sold through distributors and dealers to lawn and garden stores, landscape contractors, and nurseries, and to home, garden and, of course, golf course superintendents.

Through its three plants, Organic Compost has the capacity to produce two million pounds of finished maaterial daily. This capacity represents an input of eight million pounds of animal waste per day.

Manure is hauled to Organic Compost plants from various feedlots, meat packing companies and local farms. This raw manure is processed by specialized equipment, working with nature, until it has become bacterially active, finished compost. One such specially designed, patented machine is capable of handling 300 tons of manure per hour in the processing.

With more than mere rhetoric, Organic Compost has met the challenge of pollution and mastered it, while producing a product which is beneficial to our ecology and a boon to the individual gardener. Officials at Organic Compost say that because of its inherent nutrient value, a 50-pound bag of manure, when used with an average size tree, is the best insurance for a healthy, growing transplant.

The company, founded in 1950 by George T. Klein, now president, does a large percentage of its business under private label packaging. It produces its own lines of potting soil, humus, and fertilizer under the "Fertilife" and other trade names.

System M Algaecide Introduced By 3M Co.

System M aquatic algicide has recently joined the ranks of Envirocap controlled release algicide and System E aquatic herbicide, according to the 3M Company.

The new algicide is a wettable powder formulation containing malachite to provide effective control of chara and many species of filamentous algae in non-moving lakes, ponds, canals and waterways. Malachite is the common name for the copper compound dicopper (11) dihydroxide carbonate. System M contains 55.8 percent copper.

According to Dr. William G. Paterson, manager of Environmental Products for the company's New Business Ventures division, the product is applied to infested areas in aqueous suspension through conventional spray techniques.

Dr. Robert W. Geiger, manager of 3M's; Lakes and Waterways Management Service (LAWMS) (See WTT, June 1970, page 16), said that extensive development work on System M has been carried out in the State of Florida in cooperation with state and Federal agricultural officials.

Generally 15-25 pounds of product per acre will control chara and filamentous algae. Treated areas should remain undisturbed for 48 hours following treatment.

For more details, circle (720 on the reply card.

Pulsating Sprinkler Head Offered By Melnor Industries

A new Pulsating Sprinkler Head and Sled Base for superior watering is being offered by Melnor Industries, a division of Beatrice Food Company. The Pulsating Sprinkler #9750 has a fingertip adjustment for watering a full 75' circle or any segment. A diffuser pin adjustment makes it possible to spray from a jet-stream to a fine spray.

Priced and packaged in combination with the new pulsating head is Melnor's new sled base. The base with widely-set side supports offers stability, and is ruggedly built of high impact material, designed with double connections for use in series or individually.

Other features of the new pulsating sprinkler head are its heavy duty zinc and brass construction and its high impact materials plus the two year guarantee. For more details, circle (721) on the reply card.

—meeting dates—

Turfgrass Supplies, Irrigation and Equipment Field Day, annual event of the Metropolitan Golf Course Superintendents Assn., Brae Burn Country Club, Purchase, N.Y., Sept. 11.

Northern Michigan Turfgrass Field Day, Traverse City Country Club, Traverse City, Mich., Sept. 13.

Virginia Tech Turfgrass Field Day, Blacksburg, Va., Sept. 13-14.

International Pesticide Applicators Association, Inc., annual meeting, Thunderbird Motor Inn, Portland, Ore., Sept. 14-16.

Chain Saw and Tree Maintenance Equipment Fair, Central Nebraska Technical College, Hastings, Nebr., Sept. 22.

National Environmental Information Symposium, sponsored by the Environmental Protection Agency, Convention & Exposition Center, Cincinnati, Ohio, Sept. 24-27.

Midwest Turf Field Day, agronomy farm, Purdue University, West Lafayette, Ind., Sept. 25.

Eastern Kentucky Turfgrass Field Day and Conference, Powell Building, Eastern Kentucky University, Richmond, Ky., Oct. 10-11.

Turfgrass Equipment and Materials Educational Exposition, 12th annual, Southern California Turfgrass Council, Brookside Park, Pasadena, Calif., Oct. 11-12.

Southwest Turfgrass Conference, New Mexico State University, Las Cruces, N. Mex., Oct. 12-13.

Industrial Weed Control Conference, Memorial Student Center, Texas A&M University, College Station, Tex., Oct. 16-18.

Central Plains Turfgrass Conference, Kansas State University, Manhattan, Kan., Oct. 18-20.

National Institute on Park and Grounds Maintenance, 2nd annual, Muehlebach Hotel, Kansas City, Mo., Oct. 30-Nov. 2.

Missouri Lawn and Turf Conference, 13th annual, Ramada Inn, Columbia, Mo., Nov. 8-9.

Nebraska Weed Control Conference, 26th annual, Holiday Inn, Kearney, Neb., Nov. 8-10.

Washington State Weed Conference, Chinook Motel and Tower, Yakima Wash., Nov. 15-17.

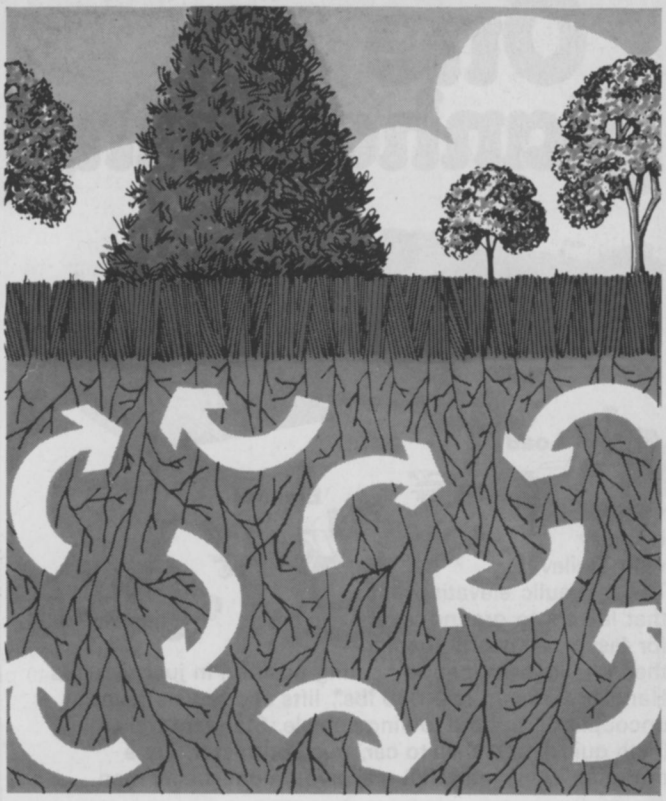
Nebraska Turfgrass Conference, Kellogg Center, University of Nebraska, Lincoln, Nebr., Nov. 20-22.

Oklahoma Turfgrass Conference, student union, Oklahoma State University, Stillwater, Okla., Nov. 29-30.

National Agricultural Aviation Assoc., 6th annual International Conference, Las Vegas Hilton (International) Hotel, Las Vegas, Nev., Dec. 11-14.

Ohio Turfgrass Conference and Show, Franklin County Memorial Building, Columbus, Ohio, Dec. 12-14.

Golf Course Superintendents Association of America, 44th annual International Turfgrass Conference and Show, Boston, Mass., Jan. 7-12.



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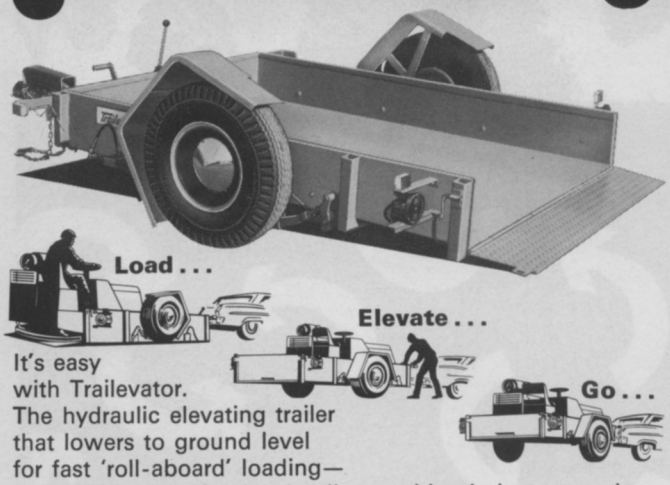

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The tank farm above was treated with Tandex before active growth started. The chemical must be carried into the root zone by moisture. Once there, it is absorbed through the plant root system. Note that lateral movement of the herbicide in the picture is minimal.

Chemical Corner

Tandex 80 WP karbutilate herbicide is a urea-carbamate compound that has demonstrated exceptional control over weeds, grasses, vines, brush and hard-to-kill wood species.

It is used both as a preemergent or postemergent treatment to non-cropland areas. Commercially available for less than two years, the herbicide has shown high potential as a herbicide for highway shoulders, under asphalt or cement roads, parking lots, military installations, airport runways, tank farms and industrial sites.

Institutional, commercial, and industrial grounds are important use areas for Tandex. It has provided weed and grass control under utility high wires and billboards, along pipelines, railroad rights-of-way, plant site fences, in cemeteries and around guy wires and public monuments.

Tandex is nonselective and at recommended rates control of vegetation will be effective for more than one growing season. Application is made just before or during the period of active growth of vegetation to allow sufficient moisture to carry the chemical into the root zone.

Application is by standard sprayers or in a convenient hand shaker for Tandex 4 granules. The granules provide a convenient means of controlling weeds in areas where mowers cannot reach. Such areas include the edges of buildings, machinery and storage sites, utility poles, property lines, fence rows, and service roads.

Among the weeds for which Tandex is Federally registered are: barnyard grass, crabgrass, brome grass, annual bluegrass, cheatgrass, bermudagrass, dallisgrass, vaseygrass; several broadleaved weeds such as milkweed, bindweed, puncture vine, docks, pigweed, thistles and others; as well as certain wood species, including brambles and poison ivy.

Tandex is manufactured by the Niagara Chemical Division, FMC Corporation, Middleport, N.Y.

Low-Cost 630 Stump Cutter Chews' Em Out in Minutes!

Looking for low-cost stump removal? Take a look at Vermeer's Model 630 Stump Cutter. It's the Diggin' Dutchman's smallest unit . . . but what a fast, man-size, chewing-out job it can do! And, even more important, you save thousands of dollars annually. One man does the whole job in minutes. No chopping . . . no sawing . . . no hand labor. A high-speed cutting wheel does all the work, you merely handle the all-hydraulic controls. Write "The Diggin' Dutchman" for more information and complete literature. Better yet, tell him you want a demonstration.

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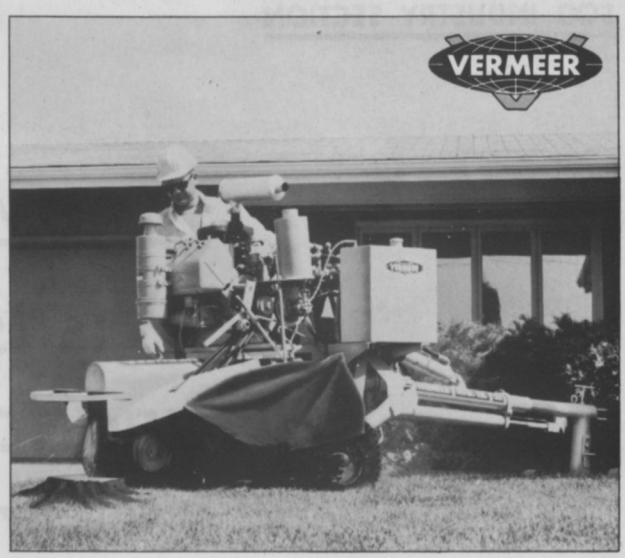

630 Stump Cutter—chews out stumps 6" below the surface, 50" wide without repositioning. Designed for hard to reach areas—backyards, cemeteries, thru gates, next to buildings. Tows behind any car, truck, tractor or jeep.

For More Details Circle (109) on Reply Card

Park and Grounds Institute Slated Oct. 30-Nov. 2

"A Practical Approach to Maintenance" is the theme of the Second Annual National Institute on Park and Grounds Maintenance to be held at the Hotel Muehlebach, Kansas City, Mo. on October 30 through November 2, 1972.

The conference will attract hundreds of top administrators in the park, golf course, campus, cemetery and institutional field.

Among the nationally known authorities who will be on the program are: Cornell University extension program leader Dr. James Dewey, who will give updated information on pesticides and pollution; Briarwood Country Club Superintendent Paul Voykin, speaking on "Overgrooming is Overspending"; U.S.G.A. Green Section Mid-Continent Director Lee Record, with ideas about maintenance and gadgets; William Landahl, director, Jackson County Park Dept., Mo., who will give a presentation on lake shore maintenance, and many more.

In addition to maintenance topics, the new regulations on Occupational Safety will be explained by a U. S. Dept. of Labor representative.

The meeting format includes general sessions, two special panels on mowing and off season maintenance, resource workshop sessions on various topics, a tour and exhibits.

The Kansas City Park and Recreation Dept. will host a tour of its facilities with the emphasis on maintenance operations. The tour will include an opportunity to see park department operated golf courses.

Last year's Institute had excellent exhibits of grounds supplies and equipment. Exhibits this year will provide the largest display of park and grounds products and equipment in the country.

Products to be exhibited include mowers, irrigation equipment, seeders, spreaders, rollers, chemicals, fertilizers, turnstiles, chain saws, etc. Many firms will display new 1973 lines for the first time.

LTV Aerospace Corporation Announces Commercial Group

LTV Aerospace Corporation of Dallas has announced that its agrichemical products division has been made part of the company's new commercial group.

The move was part of a major internal reorganization of LTV Aerospace which focused on formation of the commercial group and realignment of other operations.

BEETLE ROLLER — a stripped down Volkswagen does yeoman work as a turf roller for Willow Grass Farms, Fort Wayne, Ind. A 3-in. sprocket on rear axles and an 8-in. sprocket on the rear rollers gear the useful rig down to a practical speed. Steering is eased by a power steering pump driven off the fan belt.

ASPA Visits Canada In Force

Officer team for the '73 ASPA program: (l-r) Jack Kidwell, president; Dale Habenicht, vice-president; John Nunes, director; Ted Bosgraph, director; Jerry Brouwer, director; and Charles A. Davis, Jr., treasurer.

U.S. sod producers joined Canadian growers in July at Toronto, Ontario, Canada, for a major field day and tour.

Host for the event, the annual summer meeting of the American Sod Producers Association, was the Nursery Sod Growers Association of Ontario, with a membership of veteran cultivated sod producers.

Visitors, approximately 300, early in the tour became accustomed to discussions centered on 1000-acre and bigger sod operations. They also found that mechanization of harvesting equipment on a major scale is apparently the norm for this area of Canada. Toronto is probably the sod capital of the world today, in terms of percentage of sod used for new construction, possibly also in total used per season.

At Beder's Turf Farms Ltd., near Beeton, for example, visitors saw three Brouwer sod harvesters in one field in what proved to be a normal Beder harvesting day. Sod is rolled prior to harvesting and trucks loaded in a pallet operation. Two forklifts were in use to maintain pace with the harvesters.

In a second Beder operation two harvesters worked full time on a muck soil field. Beder reported that muck ranged up to 40 feet in depth.

Other farms visited included the M. Smilsky Farm Ltd. at Cookstown, where special loading and transporting equipment were featured, along with sod harvesting using a Ryan cutter with roller.

A unique trailer design for hauling (rather than towing) a fork lift was demonstrated at the Evans Turf Farm Ltd. at Gormley. This consisted of reinforcing and lowering the rear of a trailer bed and adding fold-down ramps for easy loading of the fork list.

Field demonstrations of sod harvesters proved a key feature of the Canadian event. On hand with demonstrator units were: John Nunes Mechanical Harvesting Co., Patterson, Calif.; Princeton Turf Harvester, Heightstown, N.J.; Beck Manufacturing Co., Auburn, Ala.; and Brouwer Turf Equipment, Ltd., Keswick, Ontario, Canada. Visitors also saw the Brouwer units in production at Brouwer's plant which is located on the farm.

Formal business of the ASPA an-

John Nunes, on tractor, demonstrates his Nunes harvester for growers.

Growers discuss Beck's Big Roll System which combines harvesting and installation.

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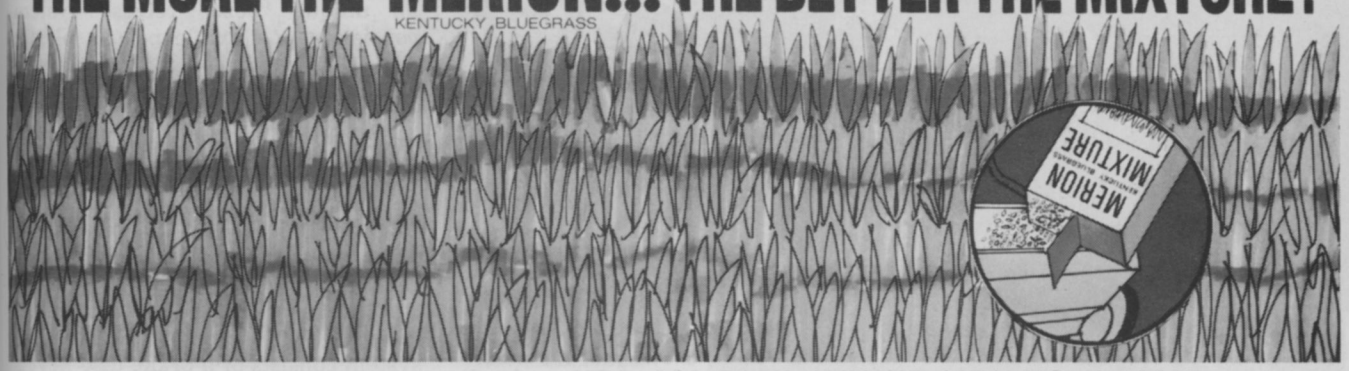
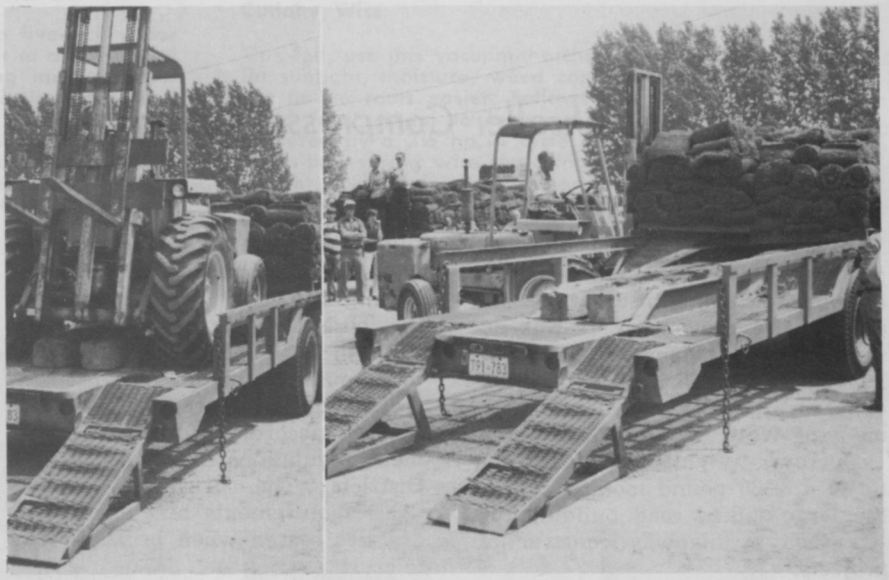


MERION BLUEGRASS ASSOCIATION, 101 PARK AVENUE, NEW YORK 10017

For More Details Circle (124) on Reply Card

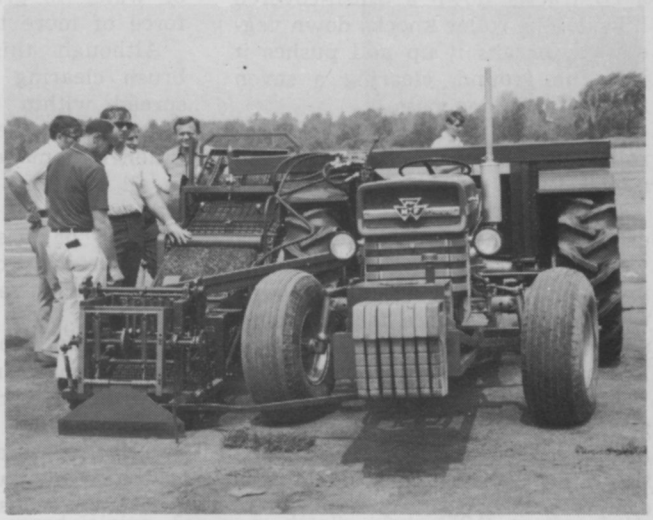
nual summer meeting included election of officers as follows: Jack L. Kidwell, Kidwell Turf Farms, Culpeper, Va., pres.; Dale Habenicht, H & E Sod Farm, Momence, Ill., vice-pres.; Charles A. Davis, Jr., Wharton Turfgrass, Inc., Wharton, Tex., treas.; and new directors, Ted Bosgraph, Bluegrass Sod Farms, Hudsonville, Mich., Jerry Brouwer, Brouwer Turf Equipment, Ltd., Keswick, Ontario, Canada and Davis. Other directors retaining office are John Nunes, Patterson, Calif., William Latta, Kansas City, and Tobias Grether, Carmarillo, Calif., Grether was outgoing president.

Dr. Henry Indyk, New Brunswick, N.J., continues as executive secretary.



Special trailer bed, with lowered and reinforced rear end plus folding ramp, is used by Evans to haul forklift on sod deliveries, Picture at left shows the forklift in loaded position.

New model of Princeton Sod Harvester.



Brouwer Sod Harvester demonstration unit.

Developer, G. I. Morrow, inspects his invention, a unique brushroller. This picture, taken by the Los Angeles Department of Water and Power, shows that the modified spiked road compactor can pulverize and compress more than 8,000 sq. ft. of hillside brush an hour.

Giant Brushroller Compresses Brush

A NEW IDEA for clearing dried brush saves time and money, is a boon for soil conservation, and aids in fire prevention. It was developed by G. I. Morrow, West Valley Operating District superintendent for the Los Angeles Department of Water and Power.

Morrow's weighty idea turned out to be a 3,860 pound modification of the large spiked road building rollers seen at highway construction projects.

The brushroller consists of two tandem steel plate rollers with six inch staggered spikes. Lowered by a D7 tractor down a brush-covered hillside, the roller knocks down vegetation, breaks it up and pushes it into the ground, clearing a seven foot path in one pass.

The winch then pulls the brushroller to the top of the slope and moves it for overlapping sweeps.

Rncico and Stone Canyon Reservoirs in the Los Angeles area were original testing ground for the invention. It proved effective enough to cover 8,400 square feet an hour, an impossible rate if performed by less efficient hand methods.

Another important feature of Morrow's invention is that it eliminates having to clean up mounds of brush since the brush is pulverized and compressed. The compression aids in fire prevention and soil conservation since combustion is difficult: the packed vegetation blocks oxygen while holding soil in place. Hand cutting can only remove some of the loose fuel that could catch fire.

Brush within 100 feet of any structure must be maintained between three and 18 inches above the ground, according to Fire Department regulations in Mountain Fire Districts. The brushroller meets these requirements best during the dry fire season when brush is easy to crush.

If dried brush is too thick for the roller under normal conditions, the roller's tanks can hold 370 gallons of water to give a total crushing force of more than three tons.

Although this new method of brush clearing will become widespread within the Department of Water and Power, there is one limitation that makes it difficult to use in all locations. The accompanying tractor must be able to travel along a crest or use some level road for necessary balance. Most locations do, however, supply the proper conditions.

As with most inventions, the brushroller wasn't developed without some problems. A prototype constructed earlier proved too light to be effective. Jim Malch, blacksmith at the West Valley District Headquarters, reconstructed the drums with plating twice as heavy as the prototype.

Experimental Irrigation Utilizes "Doze" Concept

Brighton By-Products Company, Inc. has been appointed a distributor of Du Pont Experimental Irrigation Tubing. The tubing utilizes an unique "ooze" release system consisting of flexible porous plastic tubing that places moisture in the root zone with maximum efficiency.

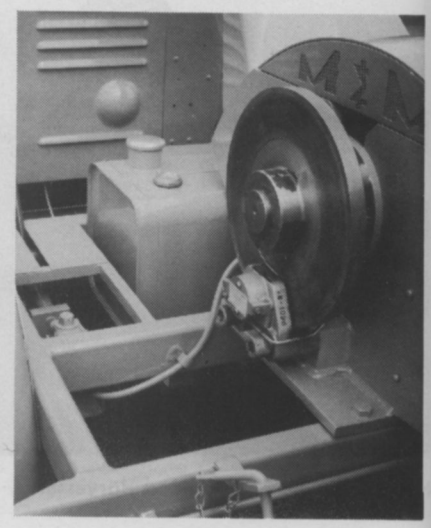
Brush Chipper Firm Includes Disc Brakes As Option

As an option in the redesign of the brush chipper, Mitts & Merrill has included airplane-type disc brakes on the chipper cylinder. The system consists of a brake disc keyed to the shaft of the chipper cylinder, caliper mounted double brake pads, hydraulic master cylinder, connecting hydraulic lines, trip levers, spring loaded actuator, trigger mechanism and ignition system interlock switch.

Mitts & Merrill personnel explain that the actuator must be cocked before the brush chipper engine can be started. In case of an emergency the operator need only activate one of the three trip levers located at the sides and across the bottom of the throat of the feed chute. The brake pads clamp the rotating disc bringing it and the chipper cylinder almost instantly to a full stop.

The stopping force required is almost identical to that required by a car traveling at 60 mph, a Mitts & Merrill spokesman said.

Here is the disc brake with the protective housing removed to show the disc, calipers, hydraulic line and handle used to cock the master cylinder actuator. An interlock switch to the engine ignition is open unless the brake actuator is cocked.



NEW IMPROVED GRASSHOPPER: M. J. Scott Co., Inc., Hutchinson, Kans.

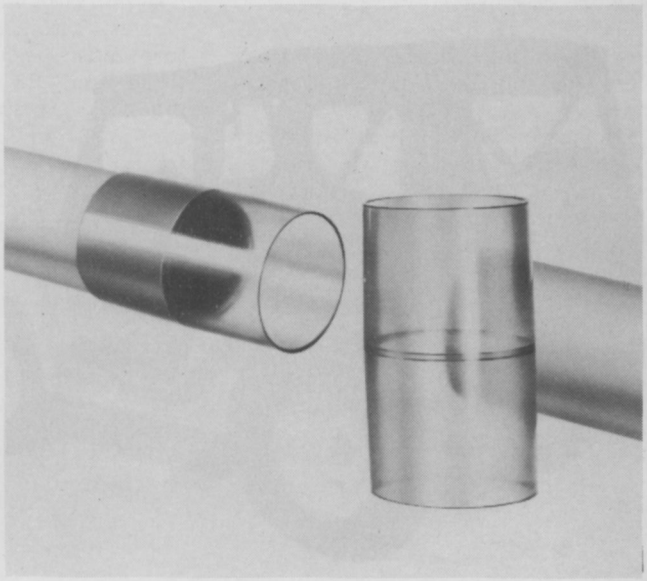
Wider turf tires give greater stability and a five-inch wider stance to this riding mower. This unit is built to allow actual trim-cutting in confined areas. The steering mechanism is simply two handles, each controlling the direction and speed of a drive wheel. A new hinged seat permits easy access to the drive mechanism. The mower deck mounting is now a double-yoke instead of a single. Other improvements include a repositioned throttle control for easy access and a solid 3/16-inch metal rear section. For more details, circle (701) on the reply card.

VACUUM-THATCHER: Arctic Mizer Manufacturers, Inc., Cudahy, Wisc.

This fall, use this vacuum-thatcher to remove all debris and let sunlight, moisture, weed control mixtures and fertilize get to the roots easier. Follows directly behind an articulated front wheel to keep unit from cutting corners. It's powered by a 3½ hp, 4 cycle gas engine that drives both the 4-tine spring wire thatching brushes and the vacuum/blower. Non-scalp brushes are quickly changeable and reversible for longer life. Height is adjustable. Model 200R measures 56 inches long, 39 inches wide and 30 inches high. It weighs only 125 pounds. For more details, circle (702) on the reply card.

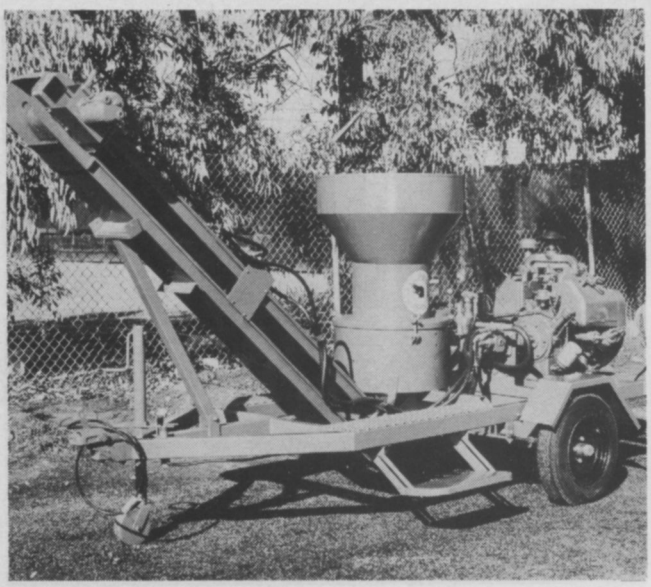
TWO PROTURF PRODUCTS: O. M. Scott & Sons, Marysville, Ohio

Here's a long-lasting ProTurf Super Fairway Fertilizer (34-3-7-3) that contains sulfur as SO_3. It's a blend of quick-release nitrogen with special slow-release nutrient nuggets. No need for filler, no risk of burning when used as directed because nutrient release is chemically controlled. Designed for use on bermudagrass fairways and grasses of the Pacific Northwest. ProTurf Fungicide II is a ready-to-use granular that prevents and controls pythium blight and gray snowmold. It is non-mercurial and may be applied with a regular drop spreader. Granules eliminate any drift problems. For more details, circle (703) on the reply card.



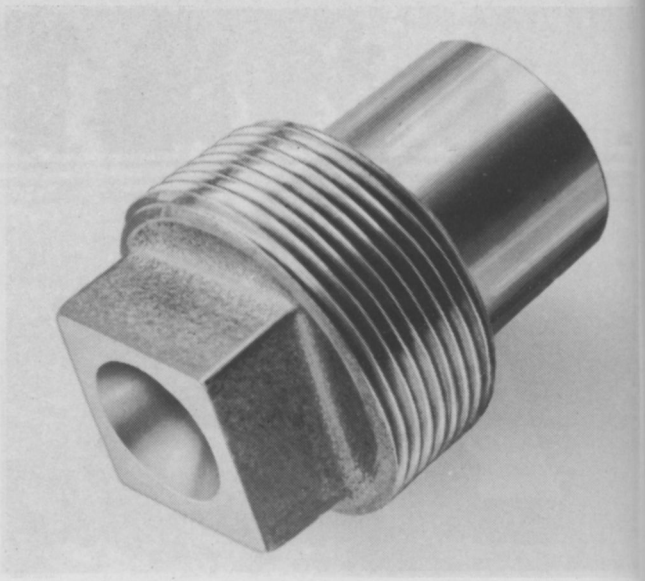
GSR COLOR GUARD SYSTEM: R & G Sloane Mfg. Co., Sun Valley, Calif.

Eliminate the chief cause of leaks in PVC pipelines, weak joints. Potential leaks are spotted instantly. Improperly cemented joints are visible with this new method of joining plastic pipe and fittings in water distribution systems. Installers can tell at a glance if joints are properly assembled and free from leaks without immediate pressure testing. Pipeline can be buried much sooner. Employs a new line of deep socket fittings made of clear PVC, new Color Guard primers and cements and new primer applicators to speed joining. For more details, circle (704) on the reply card.



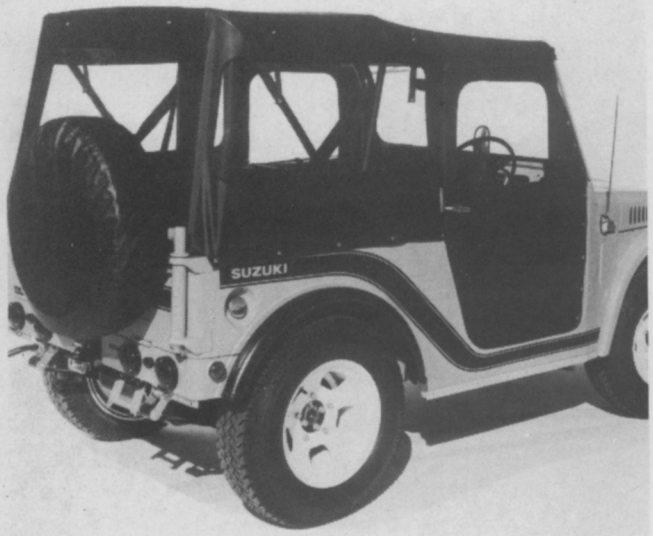
CLIPPER CHIPPERS: Lundin-Milner, Inc., Los Altos, Calif.

If you're looking for a chipper that is safe, reliable, long-wearing and low in maintenance, look no further. There's a Clipper Chipper model to fit the needs of everyone. Operation is similar to the ordinary kitchen disposal. Machine will handle such materials as wood, paper products, plastics and tin cans. Will accept up to 3-inch diameter material. Bar and cutting blades are made of Plowshare 1060 steel to produce long lasting cutting edges. When machine jams it shuts off automatically. Four versions are available: 8 hp, direct belt drive Chipmunk, the Electric Beaver powered by a 10 hp, 220 volt, 3-phase electric motor, Beaver Tractor PTO mounted on runners, and the Trailer Mounted Beaver powered by a V-4 25 hp Wisconsin engine. For more details, circle (705) on the reply card.



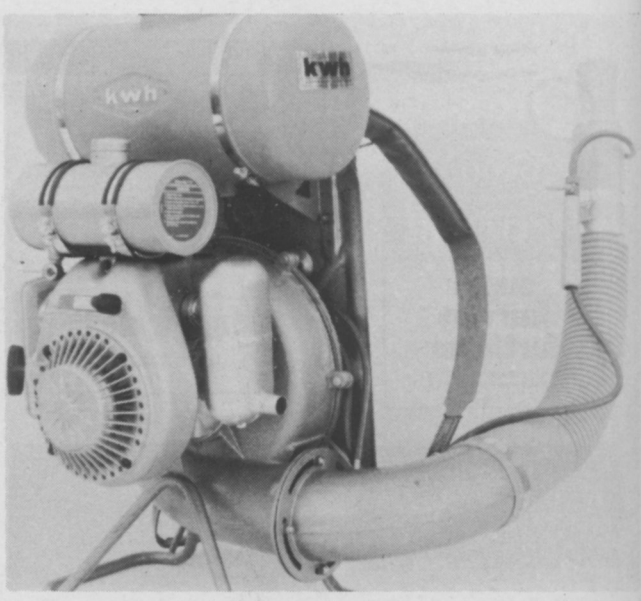
MINI-SIZED MAXI-NOZZLES: Bete Fog Nozzle, Inc., Greenfield, Mass.

A new line of spray nozzles that take no more room than pipe plugs are now available. Projection is extremely small because part of the nozzle is within the pipe fitting. Called STUBBIES, the nozzles can be used with standard pipe couplings to make female thread nozzles, with elbows to make right angle nozzles, or with tees or crosses for multiple installations. Stock materials are brass and Type 316 stainless steel. Available in three cone angles, 60, 90, and 120 degrees with flow rates from 3 to 300 gpm per nozzle. For more details, circle (706) on the reply card.



SWING-AWAY TIRE CARRIER: I.E.C. — Suzuki of San Diego, Calif.

Here's a big convenience feature, a swing-away tire carrier, that adds pizzazz to the Suzuki Brute IV 4-wheel drive. Operated by a simple turn of the locked hinge carrier at the rear, the spare tire is kept clear of obstructions in tight, timbered, or rocky terrain and saves space in the interior for extra equipment. This compact vehicle also features a dual-stroke action engine, oil injection system, 4-speeds for on or off road driving and up to 30 mpg economy. For more details, circle (707) on the reply card.



MISTBLOWER: Vandermolen Corporation, Livingston, N.J.

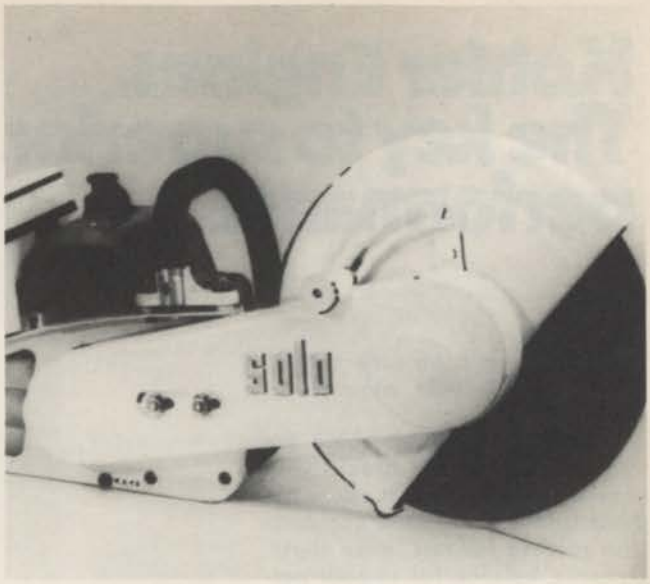
The most powerful back pack mistblower available, according to the manufacturer, is the new 79 M Mistblower. It generates an air volume of 780 cubic feet and gives a vertical reach of 40 feet. Construction is of magnesium alloy with a minimum of plastic parts for strength and durability. Quality features include blow molded tapered air hose, chemical tank with four inch removable strainer, all brass taps and fittings and full length metal back plate. For more details, circle (708) on the reply card.

HARD HAT: Glendale Optical Company, Inc., Woodbury, N.Y.

Here's just the head protection needed to conform with the Occupational Health and Safety Act. This rugged, new Glengard safety cap combines optimum protection with comfort for the wearer. It conforms with all applicable safety standards. Cap features the IDS (Incremental Dissipation of Shock) 6-point suspension system. It combines nylon cord, nylon webbing with polyethylene straps to safely dissipate shock at four graduated levels of intensity. Contour ribs provide added strength. May be worn with both ear and eye protection equipment. Winter flame retardant liners may also be used. Available in a choice of colors. For more details, circle (709) on the reply card.

HYDROGRASSER: Reinco, Inc., Plainfield, N.J.

Models HG-15 and HG-25 are two new direct chassis mounted Hydrograssers introduced this year. The manufacturer claims that the direct frame to chassis capability greatly increases the versatility of the units and will permit a wider range of accessibility. Easier on-site handling as well as reduced maintenance and down time potential are features of this new concept. The one-unit chassis to frame mobility will increase the maneuverability when working on sloping or rough terrain. The units are available in 1500 and 2500 gallon sizes. For more details, circle (711) on the reply card.



ABRASIVE SAW: Solo Motors, Inc., Newport News, Va.

Tough cutting jobs are a breeze with this new abrasive unit that attaches to the 650AV chain saw. Two types of wheels —for stone, masonry, concrete, asbestos, or for steel, girders and other metals — are available. The unit is light-weight yet powerful enough to cut through material in short order. For extra protection, Solo's unconventionally large air filter is doubled piggyback-fashion. For more details, circle (710) on the reply card.

DISC BROOMS: Wayne Manufacturing Company, Pomona, Calif.

Nothing sweeps like a new broom and this broom is made of discs. Broom core can be assembled to specified needs with either polypropylene filaments or special oil tempered wire for light sweeping, average sweeping or extremely tough debris. Polypropylene filament provides excellent bend recovery and has maximum abrasion resistance properties. The filament and anchor wire are firmly locked in a heavy gauge still ring. Wire disc wire is crimped in two directions to provide added strength and broom flair. Complete interchangability is a feature making each broom a custom design, if necessary. For more details, circle (712) on the reply card.

Kohler Engines. The key to superior performance.

Toughness is no surface thing with Kohler 4-cycle engines. It's designed-in.

Kohler engines combine the strength of cast iron blocks with engineering features that assure dependability. Automatic compression release for fast, easy starts. Dynamic balance for smooth performance, greater operator comfort. Kohler-built carburetor tailored to the engine.

Large-bore, short stroke design means maximum horsepower, less wear, longer use. All service points are readily accessible.

Kohler quality is backed by a worldwide service network. More than 800 trained U.S. distributors and 4,000 service centers, plus outlets in 65 countries.

Kohler 4-cycles, 4 to 24HP Not only a rugged engine. But your key to performance, too. See your distributor or write Kohler Co., Kohler, Wis. 53044.

—industry people on the move—

RICHARD W. STEWART, appointed assistant manager of technical services for Freeport Sulphur Company, a division of Freeport Minerals Company.

* * *

D. WES DAY, becomes president of Hometown, Inc. **JOHN H. KOPMEIER,** former president, becomes chairman of the board. A subsidiary of Hometown, Lawnhouse Products, Inc., markets a variety of lawn and garden care products.

* * *

Organizational changes at Allis-Chalmers include: **ELDRED W. (Swede) MUEHLHAUSEN** appointed merchandising manager, tractors; **JOHN N. MOORE** becomes manager, general service (he replaces **ROBERT HOWARD** who retired.); **P. NORMAN SWINFORD,** named manager, dealer service manpower; **W. E. (Bill) CARR,** appointed southeast regional manager of Allis-Chalmers Credit Corp.; **ROBERT M. HOBSON,** appointed manager of advertising, agricultural equipment division.

* * *

CHARLES J. PRIZER, named corporate general manager for engineering and environmental control, **DR. CLARENCE E. DENOON, JR.,** vice president for corporate ventures, assumes responsibility for licensing. Both are Rohm and Haas Company executives. Changes result from the recent death of **DONALD W. KENNY,** vice president.

* * *

JAMES JOLLEY, appointed general superintendent of construction for Venable Sprinkler Sales, Inc. He will direct the purchasing, ultimate delivery, fabrication activities and eventual installation at the job site.

* * *

JACK G. LOWENSTEIN, to assistant director of research and development for FMC Corporation's Niagara Chemical Division. He will be responsible for process development and formulations research.

* * *

PHELAN THOMPSON, named director of marketing for Sabre Saw Chain Ltd. He was involved in the introductory program for the 2001 saw chain. He will reside in Burlington, Ontario, Canada, headquarters of Sabre.

* * *

EVERETT W. HANSON, named president of W. A. Cleary Corporation. He moves up from the position of general sales and marketing manager.

* * *

KEITH M. ANDERSON and **DENNIS L. VEDDER** have formed A & V, Inc., a firm whose principal products are four Federally registered algaecides.

* * *

WTT STAFF ADDITION: Roger E. Gilmore joins the advertising sales staff of WEEDS TREES and TURF and The Harvest Publishing Company. Previously he managed the Redi-Rain irrigation division of Lakeshore Equipment Supply Company, Cleveland. He also served 3½ years as Turf Product Manager at Diamond Shamrock. Roger is a graduate of Bloomfield College and a native of New Jersey. He is married to the former Laraine Brunner of New Jersey. They have two sons. Gilmore will be headquartered at the Cleveland office. We want to welcome him to our staff and to this dynamic "Green Industry."

Your third step to healthier turf

3 Fall is the time to take it

If you're following the Du Pont TERSAN 1-2-3 Disease Control Program, you've already got spring and summer turf diseases licked.

Now's the time to prevent fall diseases—take your third step to healthier turf, the application of TERSAN SP on tees, fairways and greens.

TERSAN SP gives superior control of Gray Snow Mold and Pythium. These diseases will be the major problem, depending on your area, during the fall and early winter months.

TERSAN SP, like the other Du Pont TERSAN fungicides, is non-mercurial, low in human toxicity and has a large safety factor on turf.

Now is the time to take the third step in your Du Pont Disease Control Program or, if you haven't been on it, it's the time to start. You'll find the TERSAN Program is highly effective, economical...and *complete*. Prevents or controls all major turf diseases on all common grasses all year long.

NOTE: Applications of Du Pont TERSAN 1991 turf fungicide should be used in the late fall and early spring in areas where Fusarium Patch (Pink Snow Mold) is a problem.

Your golf course supplier has complete details on the program and a supply of TERSAN fungicides. Give him a call today.

With any chemical, follow labeling instructions and warnings carefully.

DU PONT
REG. U.S. PAT. OFF.

TERSAN® SP
TURF FUNGICIDE

WAR ON BRUSH *(from page 24)*

bad problem with persimmon. Banvel has given excellent control of all these species.

Users report that brush kill takes place a long time after application of Banvel.

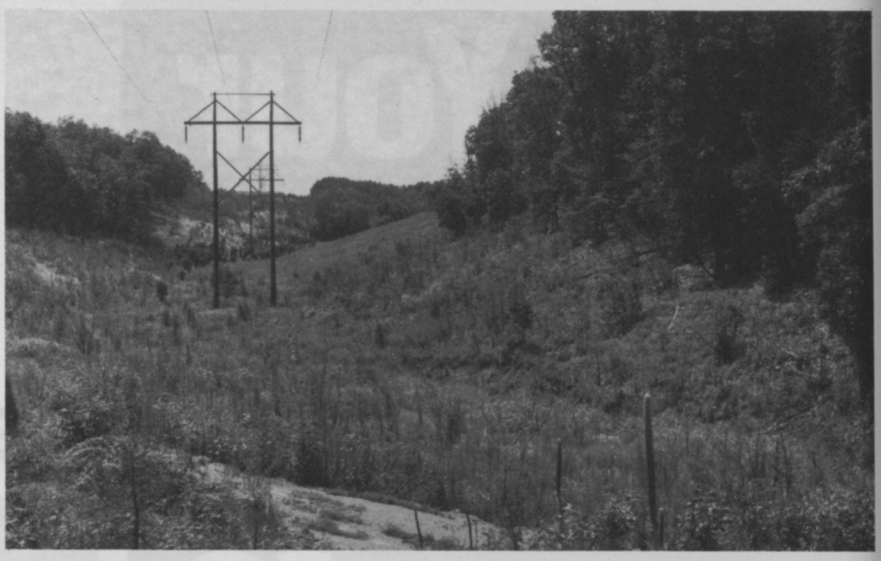
"It seems to accumulate in the plant tissue," commented Richard Fields, manager of Velsicol's industrial vegetation control department and a Banvel expert. "It becomes part of the cell structure. Although we don't have a complete explanation of the phenomenon, that must be one reason why Banvel has a slower reaction to brush than what professional applicators are accustomed to. They are used to spraying one year and evaluating the next. But with Banvel, sometimes after one year, the whole tree is in bud."

Banvel enter the plant not only through the leaves and the bark, but through the roots as well. Applicators and researchers report that the chemical translocates from the roots throughout the plant. Sprays to the bark area and surrounding foliage enhance the product's activity. Basal stem applications may be made during dormancy. Root absorption is the key.

"Under normal conditions, the rates used for brush control biodegrade in the soil in a matter of a few months," notes Fields.

The slower action of Banvel can be an advantage in reducing the number of complaints about the use of chemicals, where sudden "brown out" of vegetation during the spring and summer can alarm the public. Some states, such as Maine, have made applications along highways and other highly visible rights-of-way.

Current Federal registrations include applications to watershed areas, drainage ditches, dam sites and other areas where wildlife and cattle inhabit.



A Potomac Edison line near Winchester, Virginia, one of the first areas where extensive experimental tests were carried out with Banvel. Note the near perfect brush control under the direction of Mike Watson, Potomac Edison forester.

SKYWORKER

MODEL 1045

FOR WORK ALOFT UP TO 50 FT.
45 FT. FROM GROUND
TO BUCKET

THE SKYWORKER MODEL 1045 hydraulic aerial lift is built to provide pace setting versatility in line work and tree trimming. Ideal for lighting contractors, municipalities, utilities and tree care specialists who work at heights up to 50 Ft. For literature and technical data, write DEPT. WT-5.

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THE SKYWORKER
Corporation

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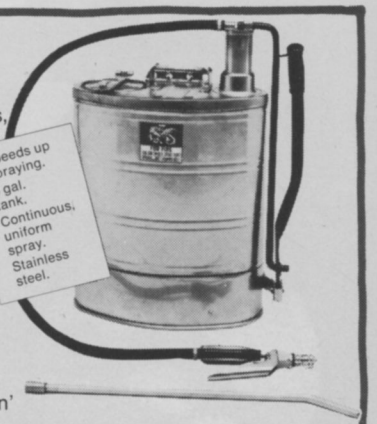
Weeds, Trees,
Fires, Insects,
Gardens, Camps,
Concrete,
Metal Parts,
Walls,
Barns,
Construction Forms,
Animals!
...You name it,



'The Dragon'

Spray-All

will spray it easier, better!

Standard extension tube reaches out and under otherwise inaccessible areas.

Three nozzle boom assembly shown at left, optional at extra cost.

Contact dealer or **PARCO** Division of
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For More Details Circle (121) on Reply Card
For More Details on Preceding Page Circle (134) on Reply Card
For More Details Circle (118) on Reply Card

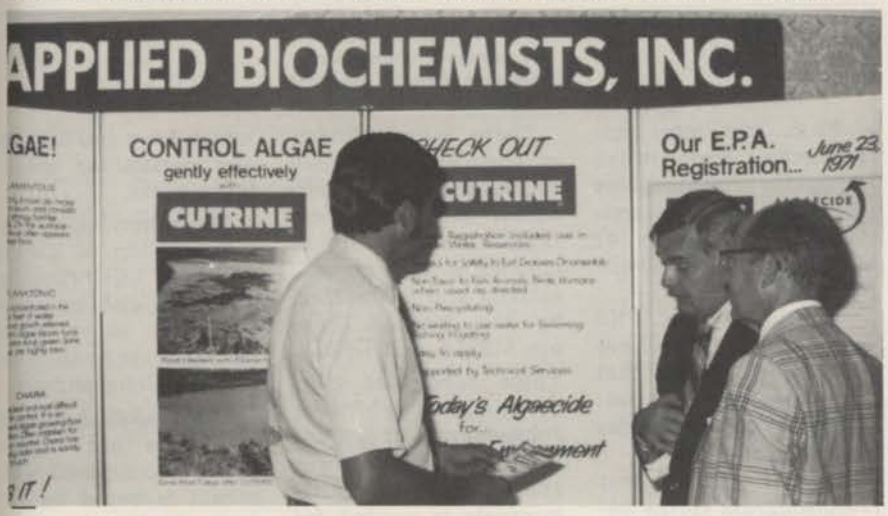
AQUATIC WEEDS *(from page 36)*

dinner. A few lucky persons participated in a white amur tasting experiment.

As usual, exhibitors at the convention reported much interest by members in such products as Cutrine (Applied Biochemists), System M (3M Company), N-Bar floating barrier (Sea Guard, Inc.), Hydout (Pennwalt Corporation), Casoron (Thompson - Hayward Chemical Company, distributed by Southern Mill Creek Products.)

Elected officers for this year are: President, Brandt G. Watson, Naples Mosquito Control, Naples; 1st Vice President, Dr. Alva P. Burkhalter, aquatic plant research and control, State of Florida; 2nd Vice President, Ray A. Spirnock, field station chief, Central & Southern Florida Flood Control District; Secretary, T. Wayne Miller, director, Lee County Mosquito Control District, Ft. Meyers, Fla.; Treasurer, Robert Geiger, 3M Company; Editor, Dr. David L. Sutton, University of Florida.

Herb Collins, (l) representative in Florida for Applied Biochemists, talks about the new Cutrine-Diquat tank-mix combination for Hydrilla control in Florida only.



Metro Tree Stress Studied At Penn State

Ornamental trees than can endure environmental stresses in metropolitan regions are the subject of a new study at The Pennsylvania State University.

Henry D. Gerhold and Maurice E. Demeritt of Penn State's school of forest resources are developing a practical genetic information system to help planters select better suited varieties for metropolitan regions. Their research is supported by the Pinchot Institute of Environmental Research through funds of the U. S. Forest Service.

Initially, a broad base of information will be obtained through a survey covering all urban and suburban regions of New England, the Middle Atlantic States, Ohio, and Michigan. A complete list is to be assembled of all officials who are responsible for tree planting and maintenance along streets and highways in large and small cities, in parks or plazas, and in other public areas in the Northeast.

Such officials are asked to cooperate by sending their name, address, and title to Dr. H. D. Gerhold, Forest Resources Laboratory, University Park, Pa. 16802. When these people are contacted, they will be asked about specific species planted, the varieties within species, and where the trees were planted and their function.

Information also will be collected regarding damage caused by diseases, insects, de-icing salts, and other variables.

Polluted air, de-icing salts, unnatural lighting, and limited rooting space cause declining vigor and death of many of the trees planted in cities and along highways, the Penn State scientists point out. Some species and varieties are genetically better adapted than others to such unfavorable conditions.

In the artificial world of the city dweller, a plant is one of the last tangible reminders of man's dependence on nature, they note.

Trees and shrubs improve the surroundings for residents of towns and cities alike. Vegetation helps to muffle street noises, provides shade and protection against wind, and removes dust and noxious gases from the air.

You've got FULL POWER BOTH CUT AND RETRACT with the ACKLEY HYDRAULIC PRUNER

You get the trimming job done faster and easier with the Ackley Hydraulic Pruner . . . . .

It gives you full hydraulic power on both the cutting and retracting strokes on any type of hydraulic system. No more hang-ups when you bite into a tough limb that baffles old type spring return pruners. You have FULL POWER on the cutting stroke too with no spring resistance to overcome.

Rugged, light weight (only 8½ pounds), balanced, big (full 2") cutting capacity. Works on all common hydraulic systems. Handle can be aluminum or hi-dielectric epoxy . . . your option. Overall length a full 84".

Oh yes . . . the Ackley pruner power system is an exclusive design that's fully patented and use proved.

Write for Free literature on all Ackley tools, air and hydraulic, that can help you get the job done with less cost at every turn.

ACKLEY MANUFACTURING COMPANY

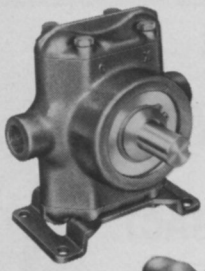
13770 S.E. Ambler Road
Clackamas, Oregon 97015
Phone 503/659-5660

For More Details Circle (110) on Reply Card

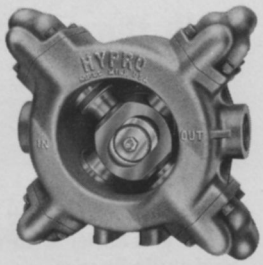
Hypro Pumps

for applying weed and turf chemicals

PISTON PUMPS

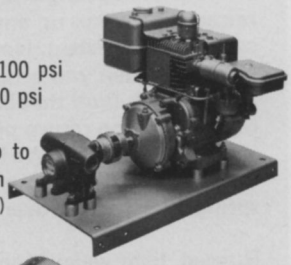


Series C5210 BIG TWIN
10 gpm (at 600 rpm)
400 psi pressure also available with gas engine

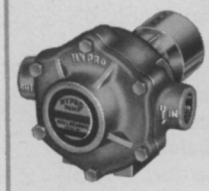


Series 5400 4-CYLINDER PUMP
25 gpm output at 600 psi

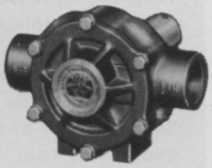
ROLLER PUMPS



Series GN6310R
6.9 gpm at 100 psi
5 gpm at 200 psi
3 hp engine
(develops up to 250 psi with 4-hp engine)



Series 7560 8-ROLLER PUMP
Output 12 gpm (at 540 rpm)
Pressure to 300 psi.



Series 1500 6-ROLLER PUMP
Output 30 gpm (at 540 rpm)
Pressure to 150 psi.

Choice of rubber or nylon rollers

Write for complete pump catalog or request pump recommendation for your need.

25 YEARS

Hypro

A division of Lear Siegler, Inc.

347 Fifth Ave. N.W., New Brighton
Saint Paul, Minnesota 55112

Agchem Div. of ICI America Moves to Delaware

Offices of the agricultural chemicals division of ICI America Inc. will be moved from Stamford, Conn. to Wilmington, Del. The announcement was made in Stamford by Dr. G. W. Padwick, vice president and general manager of the division.

The effective date of the move will be early September. After that date, the division's address will be 3411 Silverside Road, P.O. Box 751, Wilmington, Del. 19899.

The move is part of the consolidation in Wilmington of headquarters facilities of all ICI America operating divisions. Also moving from Stamford will be dyes, chemicals and plastics operations. The Stuart Pharmaceuticals division is moving from Pasadena, These moves will complete the major steps in bringing together the executive management of the company formed in January by the merger of the former Atlas Chemical Industries, Inc. and the original ICI America.

The company is a wholly-owned subsidiary of Britain's Imperial Chemical Industries Limited (ICI) of London, one of the world's largest chemical firms.

Johnsongrass Control

By James V. Parochetti
Extension Weed Specialist
University of Maryland

First, and most importantly, one must *recognize* Johnsongrass before it can be controlled. Pictures of Johnsongrass are available.

Many people who have Johnsongrass have no idea what "that stubborn weed" is until that weed invades much of the area.

Control of the first Johnsongrass sprigs before they go to seed and spread further by rhizomes, will save money and countless hours of control in the future.

Johnsongrass in noncropland must be eradicated to prevent reinfestation.

There are a number of chemicals registered for Johnsongrass eradication for these locations. One group of chemicals has no soil activity and is absorbed by the leaves. These are MSMA and DSMA. These herbicides must be reapplied whenever Johnsongrass regrows; usually two to three applications at monthly intervals is needed for eradication. Some regrowth can be expected the following year.

The other group of herbicides most commonly used for spot treatment of Johnsongrass are the herbicides which have soil activity and persist for one to three years.

These herbicides may kill the top of plants, but they kill primarily by root uptake. Any herbicide at a high enough concentration will kill Johnsongrass.

The reason that some herbicides are registered as compared with others is based on (1) cost, (2) length of soil residual and (3) effectiveness in killing Johnsongrass. The University of Maryland recommends several soil residual herbicides for Johnsongrass control in non-cropland.

COMMON NAME	TRADE NAME	MANUFACTURER OR FORMULATOR
Bromacil	Hyvar X	DuPont
	Instemul BRO-40	Stull Chemical
	Krovar I	DuPont
	Urox B	Allied Chemical
	Weed Free B-8 (&LB)	Chapman
Monuron	Telvar	DuPont
Prometon	Pramitol 25E	Geigy
Karbutilate	Tandex 80WP & 4G	FMC (Niagara)
Sodium chlorate	Atlacide	Rhodia (Chipman)
	Sodium Chlorate	Hooker
Sodium chlorate + sodium borate	MBC	Occidental
	Monoborchlorate	U.S. Borax
Sodium chlorate + sodium borate + bromacil (1.5%)	Ureabor	U.S. Borax
Sodium chlorate + sodium borate + prometone (5%) + simazine (0.75%)	Pramitol 5PS	CIBA-Geigy

— classifieds —

When answering ads where box number only is given, please address as follows: Box number, c/o Weeds Trees and Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

Rates: "Position Wanted" 10¢ per word, minimum $3.00. All other classifications 20¢ per word, minimum $4.00. All classified ads must be received by Publisher the 10th of the month preceding publication date and be accompanied by cash or money order covering full payment. Boldface rule box: $25.00 per column inch.

SEEDS

SOD QUALITY MERION SEED for discriminating growers. Also Fylking, Delta, Park, Newport, Nugget and Pennstar bluegrasses as well as fine fescues. We will custom mix to your specifications. Michigan State Seed Company, Grand Ledge, Michigan 48837. Phone 517 627-2164.

EDUCATION-BOOKS

LEARN AUTOMATIC IRRIGATION. Easy to follow text and diagrams on latest valves, heads, controllers. System design, operation and trouble shooting. Write for free outline on this ten lesson low cost course. Larson Company, P.O. Box 4453, Santa Barbara, Calif. 93103.

MISCELLANEOUS

TREE APPRAISALS, SURVEYS, loss evaluations and expert consultation services. For names of members of the American Society of Consulting Arborists, Inc., throughout the country, contact: Executive Director ASCA, 12 Lakeview Ave., Milltown, New Jersey 08850.

LANDSCAPE DESIGN KIT 37 rubber symbol stamps and ink pad, postpaid $25.00 C.O.D. $26.00 plus postage. Order direct or brochure sent. California add tax. T-Gordon's, Box 741T, Reseda, Calif. 91335.

USED EQUIPMENT

FULL LINE OF USED TREE equipment for sale. We accept trade-ins and buy used tree equipment. New service available for northern Ohio. We now rent skyworkers, tree spades, brush grinders, 84' National crane, stump grinders and wood splitters. Edwards Tree Service, 3190 Cooper Foster Park Road, Vermilion, Ohio 44089. Phone: 216 967-6750 or 933-6750.

RECONDITIONED brush chippers, sprayers, log splitters, stump routers, bucket trucks. Let us know your needs. Equipment Sales Company, 5620 Old Sunrise Highway, Massapequa, New York 11758. Phone 516 799-7619.

VALLEY PRODUCTS stump cutter model 5, new condition, $450. County Tree Service, 578 Broadway, Carle Place, New York 11514. Phone 516 333-1770.

5 FOOT ANDERSON rock picker, good condition. Green Valley Turf Farms, Box 163, Canfield, Ohio 44406. Phone 216 533-3354.

1969 ASPHUNDH V-8 16" chipper, $3200.00 Ohio Chipper & Equipment, Mentor, Ohio 44060. Phone 216 255-5144.

FOR SALE

DOUBLE EDGE sod cutter blades. Will fit any Ryan sod cutter. Works like double edge razor blade. Cuts much more sod per blade. Made to bolt on both ways. $24.00 plus postage. New automatic sod loaders for direct loading to pallets, trucks or trailers. No workers needed on ground. Both products developed and designed by Hadfield. Write or call Glen Hadfield, 4643 Sherwood, Oxford, Michigan 48051. Phone 313 628-2000.

CHAIN SAW CHAIN, bars, sprockets, sharpening equipment, saw parts and accessories. Save to 40%. Professional quality, fully guaranteed. World's largest mail order supplier of this equipment. Free catalog. Write Zip-Penn, Box 43073-A68, Middletown, Ky. 40243.

THE GOLD ONES from D. J. Andrews, Inc., Stump cutter teeth, pockets, and bolts. Top quality and best price in the U.S.A. D. J. Andrews, Inc., 17 Silver St., Rochester, N.Y. 14611. Call 716 235-1230 or 716 436-1515.

TREE SERVICE FIRM, 2 truck and brush chipper stump grinder, chain saws and hand tools. Richard D. Schupp. R1, Box 66, Dennison, Ohio 44621. Phone 614 922-3385.

HELP WANTED

ABORIST WANTED If you are an experienced Arborist, are capable of supervising a crew of men, have experience in landscape design and would like to join a growing company, we'd like to discuss a permanent position with you. Excellent fringe benefits are available and a salary commensurate with your experience. All inquiries will remain confidential. Send your resume to: American Tree and Landscape Co., N97 W21756 Whitehorse Dr., Colgate, Wis. 53017, Attn: Ross Barnekow.

TEACHING POSITION AVAILable: Edmonds Community College seeks a second instructor of Ornamental Horticulture to begin Autumn Quarter, 1972. Areas to be taught consist of landscape design and construction and full maintenance of established plantings. Send resume to: Dean of Instruction, Edmonds Community College, 20000 68th Avenue West, Lynnwood, Washington 98036.

DISTRIBUTORS for D. J. Andrews, Inc. stump cutter teeth, pockets and bolts. Best wholesale and retail price in U.S.A. Add to this exclusive area, local advertising at our expense, etc., and you have our story. D. J. Andrews, Inc., 17 Silver St., Rochester, N.Y. 14611. Call 716 235-1230, or 716 436-1515.

BUSINESS OPPORTUNITIES

A WELL ESTABLISHED Tree Surgery and Landscape business located in southern New England is looking for a man who would sell tree service and landscape work in surrounding areas; one who is aggressive, with initiative and capability to sell. This business will be sold to the right man for as little as $15,000.00 down to start. Owner has to slow down and remove himself within a 3 or 4 year period. Send your resume and we will set up an appointment. All replies confidential. Write Box 87, Weeds Trees and Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

POSITION WANTED

GRADUATE HORTICULTURIST desires position as city forester, supt. of parks, grounds maintenance supt. or similar type position. 5 years experience in grounds maintenance supervision including planting, insecticides, herbicides, design, drainage and erosion control. Willing to relocate. Preferred areas: 1. Atlanta, Ga. 2. Ohio. 3. Southeast U.S. Resume sent on request. Box 90, Weeds, Trees, & Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

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—trimmings—

EPA ESTIMATES that air pollution costs the nation more than $16 billion a year in material losses — lost working hours because of health effect and damage to plant life and property. Water pollution accounts for nearly $13 billion a year in damage. Strict enforcement of antipollution efforts spread among the nation's 60 milion families would cost each family an average of $481 a year.

GIANT AFRICAN SNAIL is on the march again. This time USDA has placed under Federal regulation on an additional area in Dade county, Florida. It includes nearly two square miles of North Miami in the Biscayne Gardens section. Animal and Plant Health Inspection Service personnel describe the giant African snail as one of the most destructive mollusk pests known to man. Under the regulation, items such as sod, soil, compost, manure, sand, gravel, bricks, stones, pipes, nursery grown plant, plant debris, etc. are restricted to **INTRA**-state movement. Restricted items may be moved **INTER**-state under permit if they are going to certain approved destinations.

COUNCIL ON ENVIRONMENTAL QUALITY, in a third annual report, has stated that our air is getting cleaner but our water dirter. Based on air samplings between 1969 and 1970, emission of carbon monoxide has dropped 4.5 percent and particulates 7.4 percent, primarily through controls applied to smokestacks. But water pollution from sources such as municipal sewer systems and industry had not decreased. A further source of increasing water pollution, which the council has underestimated, is the runoff from construction projects and agricultural lands.

PURDUE UNIVERSITY extension agronomists say that weed control in turfgrass lawns can be accomplished any time. However, late fall herbicide applications are better than those in midsummer for broadleaf weed control.

PETROSET SB EMULSION is a new soil binder developed by Phillips Petroleum Company. It's easy to use. Dilute with water and apply with conventional spray equipment. Field performance from a half-dozen or more states indicates that the material can prevent erosion and soil loss until grass is established. For more information, write Phillips Petroleum Company, chemical department, 15 B1 Phillips Building, Bartlesville, Okla. 74004.

"BUG IN" is the latest twist in the anti-pesticide crusade. A bulletin of the New Jersey Federation of Shade Tree Commissions reports that distribution of lady bugs and praying mantis egg cases is a big ticket item. Recommendations for an average lot are three mantis cases and a half pint of lady bugs. In Maplewood, N. J., boy scouts distributed egg cases throughout a twenty acre park.

SUPERIOR COTTONWOODS for the south is paying off for the Forest Service, USDA. More than 615,000 cuttings of genetically superior cottonwood trees have been shipped to state and private tree nurseries in the lower Mississippi Valley. The trees, a result of Forest Service research initiated 15 years ago, will grow as much as 12 feet in height each year — 20 percent faster than ordinary cottonwoods. An estimated 750,000 acres of land in the south is suitable for growing cottonwoods. "We expect that the availability of the genetically improved stock will increase reforestation efforts on this land," said John R. McGuire, Forest Service chief.

THE WHITE AMUR, a herbivorous fish being tested to control aquatic vegetation in Florida, is generally docile. When excited, however, it can jump out of the water like the Navy's Poseidon missle. Cases have been reported where people have been knocked unconscious by speeding white amur weighing 20 or more pounds. That's a hit and swim accident that won't make the police blotter.

CRABGRASS

(Digitaria sarguinalis)

By DR. JOSEPH DUICH
Department of Agronomy
Pennsylvania State University

Crabgrass is one of the major weeds confronting both the homeowner and professional turf manager. It is simply notorious—if life had existed on the moon, the astronauts would have anticipated finding crabgrass!

Prevalent in most areas with over 70 frost-free days, crabgrass is a pale green summer annual. Germination begins in mid-spring, shortly after lilacs bloom, and may extend for over six weeks. The finger-like seed heads produce thousands of seeds for next year's problem. Researchers have found over 400 seedling plants per square foot.

Physiologically, crabgrass is able to thrive during hot weather and even withstand drought better than most turfgrasses. After the first heavy fall frost, crabgrass dies leaving unsightly brown patches in the turf. Its only known weakness is inability to grow in the shade, including that provided by a dense turf.

EDITOR'S NOTE: An 8½ x 11-inch color print of crabgrass shown at the right is available, at no charge, by writing to: O. M. Scott & Sons Company, Marysville, Ohio 43040.

Crabgrass

(*Digitaria sanguinalis*)

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ILLUSTRATION BY J. CONVERSE

FORE! exclusively from Lofts!

Certified baron* KENTUCKY BLUEGRASS

Husky BARON cluster (left), common bluegrasses (right), mowed about one inch.

Baron Kentucky Bluegrass is the perfect choice for golf course fairways. It is a dwarf variety which germinates rapidly. Baron remains shorter and needs less frequent mowing than the known varieties of Kentucky bluegrass, which affords obvious economic advantages. It takes low mowing beautifully, even as low as ¾ inch. The sturdy, broad blades interlock to make a "crisp" surface that holds a golf ball well on the fairway. The dense turf is winter hardy with a fine winter color. Its leaves stay relatively unblemished by leafspot, rust or stripe smut. All Baron seed is CERTIFIED BLUE TAG, poa annua and bentgrass free. Baron sod is available from leading sod growers across the country.

* U.S. Dwarf Variety Plant Patent No. 3186

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Certified Exeter COLONIAL BENTGRASS

Here's a highly disease, drought, and mold resistant seed ideal for fairways alone or in combinations with other grasses. Exeter greens up earlier, stays green better in summer.

Certified Kingstown VELVET BENTGRASS

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